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158220

From: Mertz, Prema  
Sent: Tuesday, July 05, 2005 2:37 PM  
To: STIC-Biotech/ChemLib  
Subject: 10/750,797

CRF

Please search SEQ ID NO:1-2 with protein databases.

Thanks.

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\*\*\*\*\*

STAFF USE ONLY

Searcher: \_\_\_\_\_  
Searcher Phone: 2-\_\_\_\_\_  
Date Searcher Picked up: \_\_\_\_\_  
Date Completed: \_\_\_\_\_  
Searcher Prep/Rev. Time: \_\_\_\_\_  
Online Time: \_\_\_\_\_

\*\*\*\*\*

Type of Search

NA#: \_\_\_\_\_ AA#: \_\_\_\_\_  
Interference: \_\_\_\_\_ SPDI: \_\_\_\_\_  
S/L: \_\_\_\_\_ Oligomer: \_\_\_\_\_  
Encode/Transl: \_\_\_\_\_  
Structure#: \_\_\_\_\_ Text: \_\_\_\_\_  
Inventor: \_\_\_\_\_ Litigation: \_\_\_\_\_

\*\*\*\*\*

Vendors and cost where applicable

STN: \_\_\_\_\_  
DIALOG: \_\_\_\_\_  
QUESTEL/ORBIT: \_\_\_\_\_  
LEXIS/NEXIS: \_\_\_\_\_  
SEQUENCE SYSTEM: \_\_\_\_\_  
WWW/Internet: \_\_\_\_\_  
Other(Specify): \_\_\_\_\_

GenCore version 5.1.6  
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# OM protein - protein search, using sw model

Run on: July 9, 2005, 12:41:15 ; Search time 111.181 Seconds

(without alignments)  
801.415 Million cell updates/sec

Title: US-10-750-797-1

Perfect score: 896  
Sequence: 1 TPLGPASSLPISFLKCLEQ.....SHLQSFLEVSRYVRLHQAQ 174

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database : UniProt\_03:\*  
1: uniprot\_sprot:\*  
2: uniprot\_trembl:\*

Pred. NO. is the number of residues predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	896	100.0	200	Q8N4W3	Q8N4W3 homo sapien
2	884.5	98.7	207	CSF3_HUMAN	P09919 homo sapien
3	744	83.0	194	CSF3_FELCA	O02708 felis silve
4	744	83.0	195	Q8GJ00	O8GJ00 felis silve
5	738	82.4	174	CSF3_SHEEP	O28746 ovis aries
6	734	81.9	175	CSF3_CANFA	P35834 canis fam1
7	727	81.1	195	CSF3_BOVIN	P35833 bos taurus
8	702	78.3	195	CSF3_PIG	O02837 sus scrofa
9	641	71.5	208	CSF3_MOUSE	P09920 mus musculu
10	634	70.8	214	P97712	P97712 rattus norv
11	511	57.0	127	Q8MK60	Q8MK60 equus cabal
12	304	33.9	201	MGP_CHICK	P13854 gallus gall
13	111	12.4	241	O90Y10	O90Y10 gallus gall
14	110.5	12.3	212	O8MJ75	O8MJ75 sus scrofa
15	108	12.1	208	O9XT80	O9XT80 delphinape
16	106.5	11.9	212	IL6_PYG	P26893 sus scrofa
17	101	11.3	205	IL6_ORCOR	Q28747 orcinus orc
18	100	11.2	208	IL6_HORSE	Q95181 equus cabal
19	96	10.7	189	O6NZ82	O6NZ82 homo sapien
20	96	10.7	189	O6NZ82	O6NZ82 homo sapien
21	95	10.6	208	IL6_FELCA	P41683 felis silve
22	94.5	10.5	455	O8D706	O8D706 vitrio vuln
23	94	10.5	345	O9PCT16	O9PCT16 vitrio ch01
24	93	10.4	189	O9NPF7	O9NPF7 homo sapien
25	91	10.2	189	O6NZ80	O6NZ80 homo sapien
26	89.5	10.0	214	O8MK65	O8MK65 sus scrofa
27	89.5	10.0	2175	1 HMCU_DROME	P10180 dreosophila
28	88.5	9.9	666	2 O9A523	O9A523 calodactar
29	88.5	9.9	786	O91019	O91019 pseudomomas
30	88.5	9.9	1931	2 O8BJY3	O8BJY3 stigmatalia
31	86	9.6	208	1 IL6_BOVIN	P26892 bos taurus

32	86	9.6	502	2	Q34008	Q34008 beta vulgar
33	86	9.6	788	2	O8CF87	O8CF87 mus musculu
34	86	9.6	850	2	Q7TQ21	Q7TQ21 mus musculu
35	86	9.6	851	2	O8CF88	O8CF88 mus musculu
36	86	9.6	852	2	O81179	O81179 mus musculu
37	85.5	9.5	211	2	O865W7	O865W7 camelus bac
38	85.5	9.5	1288	2	O8LQR8	O8LQR8 oryza sativ
39	85	9.5	193	2	O9N2H9	O9N2H9 sus scrofa
40	85	9.5	208	1	O6V919	O6V919 bubalus bub
41	84.5	9.4	209	1	IL6_PHOVI	O28819 phoca vitul
42	84.5	9.4	211	1	IL6_TAMGL	O85X6 lama glama
43	84.5	9.4	455	2	O7MDW7	O7MDW7 vitrio vuln
44	84	9.4	175	2	O9TTH4	O9TTH4 acutus nigri
45	84	9.4	208	1	IL6_CAPHI	O28319 capra hircu

## ALIGNMENTS

RESULT 1  
Q8N4W3 PRELIMINARY: PRT: 200 AA.  
AC Q8N4W3; 01-OCT-2002 (TrEMBLrel. 22, Created)  
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)  
DE 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)  
DE Colony stimulating factor 3, isoform c.  
GN Name=CSF3;  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
[1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Skin;  
RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;  
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
RA Klausner R.D., Collins F.S., Wagner L., Sherman C.M., Schuler G.D.,  
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
RA Diachenko L., Marzella K., Farmer A.A., Rubin G.M., Hong L.,  
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
RA Brownstein M.J., Ueidi T.B., Toshimuki S., Carninci P., Prange C.,  
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,  
RA Bosack S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
RA Richards S., Morley K.C., Hale S., Garcia A.M., Gay L.J., Hulik S.W.,  
RA Villalón D.K., Nuzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
RA Fahy J., Heltan E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,  
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,  
RA Krzywinski M.I., Skalsky U., Smallos D.E., Scheraga A., Schein J.E.,  
RA Jones S.J., Mair M.A.,  
RT "Generation and initial analysis of more than 15,000 full-length human  
and mouse cDNA sequences".  
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).  
[2]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Skin;  
RX Strausberg R.L.,  
RA Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.  
RL EMBL: BC033245; AAH3245.1;  
DR HSSP; P09919; IGCN.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005125; F:cytokine activity; IEA.  
DR GO; GO:0005138; F:cytokine activity; IEA.  
DR GO; GO:0006955; P:immune response; IEA.  
DR InterPro; IPR009079; 4 helix cytokine.  
DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
DR InterPro; IPR003574; Interleukin\_6.  
DR Pfam; PF00489; IL6; 1.  
DR PRINTS; PR00433; IL6GCSFMGF.

DR PRINTS: PR00434; INTERLEUKIN6.  
 DR Prodom: PD008388; GCSF MGF: 1.  
 DR Prodom: PD004356; Interleukin\_6; 1.  
 DR SMART: SM00126; IL6; 1.  
 DR PROSITE: PS00254; INTERLEUKIN\_6; 1.  
 DR SEQUENCE 200 AA; 21543 MW; 8648AA55B329A96C CRC64;  
 SO  
 Query Match 100.0%; Score 896; DB 2; Length 200;  
 Best Local Similarity 100.0%; Pred. No. 5.2e-74;  
 Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 1 TPLGPAASLPSPFLKCEYVRIKIQDGAALOEKLCATYKCHPELVYLGHSIGIPWAP 60  
 DB 27 TPLGPAASLPSPFLKCEYVRIKIQDGAALOEKLCATYKCHPELVYLGHSIGIPWAP 86  
 QY 61 LSSCPQALQAGLSQHSGLFLYQGLQALGISELPGLDTLQDLVDVDFATTIQQ 120  
 DB 87 LSSCPQALQAGLSQHSGLFLYQGLQALGISELPGLDTLQDLVDVDFATTIQQ 146  
 QY 121 MEELGMALOPTQGAMPAPASAFORRAGVIVASHQSFLSVSYRVLRLAQP 174  
 DB 147 MEELGMALOPTQGAMPAPASAFORRAGVIVASHQSFLSVSYRVLRLAQP 200  
 RESULT 2  
 CSF3 HUMAN STANDARD; PRT; 207 AA.  
 ID CSF3 HUMAN P09919;  
 AC P09919;  
 DT 01-MAR-1989 (Rel. 10, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF) (Pluripoietin)  
 DE (Flgrastim) (Lenograstim).  
 GN Name:CSF3;  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Homidae; Homo.  
 OX NCBI\_TaxId=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=66118679; PubMed=3484805;  
 RA Nagata S., Tsuchiya M., Asano S., Kaziro Y., Yamazaki T., Yamamoto O.,  
 RA Hirata Y., Kubota N., Oheda M., Nomura H., Ono M.;  
 RT "Molecular cloning and expression of cDNA for human granulocyte  
 RT colony-stimulating factor.";  
 RL Nature 319:415-418 (1986).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=66220137; PubMed=2423327;  
 RA Nagata S., Tsuchiya M., Asano S., Yamamoto O., Hirata Y., Kubota N.,  
 RA Oheda M., Nomura H., Yamazaki T.;  
 RT "The chromosomal gene structure and two mRNAs for human granulocyte  
 RT colony-stimulating factor.";  
 RL EMBO J. 5:575-581 (1986).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=67196936; PubMed=3494801;  
 RA Devlin J.C., Devlin P.E., Myambo K., Lilly M.B., Rado T.A.,  
 RA Warren M.K.;  
 RT "Expression of granulocyte colony-stimulating factor by human cell  
 RT lines.";  
 RL J. Leukoc. Biol. 41:302-306 (1987).  
 RN [4]  
 RP SEQUENCE FROM N.A. AND VARIANTS MET-157 AND THR-174.  
 RA Rieder M.J., Carrington D.P., Chung M.-W., Lee K.L., Poel C.L., Yi Q.,  
 RA Nickerson D.A.;  
 RT "SeattleSeq, NHBI H66682 program for genomic applications, UW-  
 RT FHCRC, Seattle, WA (URL: <http://pga.gs.washington.edu>).";  
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.  
 RN [5]  
 RP SEQUENCE OF 19-207 FROM N.A.  
 RX MEDLINE=66151684; PubMed=2420009;  
 RA Souza L.M., Boone T.C., Gabrilove J., Lai P.H., Zeebo K.M.,

RA Murdock D.C., Chazin V.R., Bruszewski J., Lu H., Chen K.K.,  
 RA Barendt J., Platzer B., Moore M.A.S., Mettelmann R., Welte K.;  
 RT "Recombinant human granulocyte colony-stimulating factor: effects on  
 RT normal and leukemic myeloid cells.";  
 RL Science 232:61-66 (1986).  
 RN [6]  
 RP CARBOHYDRATE-LINKAGE SITE.  
 RX MEDLINE=93293942; PubMed=7685769;  
 RA Clogston C.L., Hu S., Boone T.C., Lu H.S.;  
 RT "Glycosidase digestion, electrophoresis and chromatographic analysis  
 RT of recombinant human granulocyte colony-stimulating factor glycoforms  
 RT produced in Chinese hamster ovary cells.";  
 RL J. Chromatogr. A 637:55-62 (1993).  
 RN [7]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=93106200; PubMed=1281794; DOI=10.1016/0014-5793(92)81521-W;  
 RA Zink T., Rose A., Ambrosius D., Rudolph R., Holak T.A.;  
 RT "Secondary structure of human granulocyte colony-stimulating factor  
 RT derived from NMR spectroscopy.";  
 RL FEBS Lett. 314:435-439 (1992).  
 RN [8]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=94304859; PubMed=7518249;  
 RA Zink T., Rose A., Luers K., Gieslar C., Rudolph R., Holak T.A.;  
 RT "Structure and dynamics of the human granulocyte colony-stimulating  
 RT factor determined by NMR spectroscopy. Loop mobility in a four-helix-  
 RT bundle protein.";  
 RL Biochemistry 33:8453-8463 (1994).  
 RN [9]  
 RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).  
 RX MEDLINE=93281718; PubMed=7685117;  
 RA Hill C.P., Oestlund T.D., Eisenberg D.;  
 RT "The structure of granulocyte-colony-stimulating factor and its  
 RT relationship to other growth factors.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 90:5167-5171 (1993).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 CC cytokines that act in hematopoiesis by controlling the production,  
 CC differentiation, and function of 2 related white cell populations  
 CC of the blood, the granulocytes and the monocytes-macrophages. This  
 CC CSF induces granulocytes.  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=Long;  
 CC IsoId=P09919-1; Sequence=Displayed;  
 CC Name=Short;  
 CC IsoId=P09919-2; Sequence=VSP\_002673;  
 CC -1- PTM: O-glycan consists of Gal-GalNAc disaccharide which can be  
 CC modified with up to two sialic acid residues (done in  
 CC recombinantly expressed G-CSF from CHO cells).  
 CC -1- PHARMACEUTICAL: Available under the names Neupogen or Granulokine  
 CC (Amgen/Roche) and Granocyte (Rhône-Poulenc). Used to treat  
 CC neutropenia (a disorder characterized by an extremely low number  
 CC of neutrophils in blood).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 CC -1- CAUTION: Ref.4 misquotes the gene name as "CSF1".  
 CC -1- DATABASE: NMB=Neupogen/Granulokine;  
 CC NOTE=Clinical information on Neupogen/Granulokine;  
 CC WWW=<http://www.neupogen.com/>.  
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 CC -----  
 DR EMBL: X03438; CAA27168.1; -;  
 DR EMBL: M13008; AAA03056.1; -;  
 DR EMBL: X03656; CAA27291.1; -;  
 DR EMBL: X03655; CAA27290.1; -;

```

DR EMBL: AF388025; AAK62469.1; -.
DR EMBL: M17706; AAA5882.1; -.
DR PIR: A24573; A24573.
DR PIR: A25093; FOHUGL.
DR PDB: 1CD9; X-ray; A/C=30-207.
DR PDB: 1GNC; NMR; @=30-207.
DR PDB: 1FGR; X-ray; A/C/E/G=30-207.
DR PDB: 1RKG; X-ray; A/B/C=31-207.
DR GeneW: HGNC:2438; CSF3.
DR MIM: 138970; -.
DR GO: GO:0005615; C:extracellular space; TAS.
DR GO: GO:0005130; F:granulocyte colony-stimulating factor recep. .; TAS.
DR GO: GO:0007275; P:development; TAS.
DR GO: GO:0008284; P:positive regulation of cell proliferation; TAS.
DR InterPro: IPR009079; 4 helix cytokine.
DR InterPro: IPR003629; IL6_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
DR 3D-structure: Alternative splicing; Cytokine; Glycoprotein;
KW Growth factor; Pharmaceutical; Polymorphism; Signal.
KV
FT SIGNAL 1 30
FT CHAIN 1 207
FT DISULFID 31 75
FT DISULFID 97 107
FT CARBOHYD 166 166
FT VASPLIC 66 68
FT VARIANT 157 157
FT VARIANT 174 174
FT HELIX 41 65
FT HELIX 69 71
FT HELIX 77 86
FT TURN 87 88
FT HELIX 105 124
FT TURN 125 127
FT TURN 130 132
FT HELIX 133 156
FT TURN 157 158
FT HELIX 176 203
FT TURN 204 204
SQ SEQUENCE 207 AA; 22293 MW; 421F635ECC776996 CRC64;

Query Match 98.7%; Score 884.5; DB 1; Length 207;
Best Local Similarity 98.3%; Pred. No. 6.1e-73;
Matches 174; Conservative 0; Mismatches 0; Indels 3; Gaps 1;

QY 1 TPLGASSTLPSFLKLCLEQVRKIQGDGALOEK---CATYKLCHEBELVILGSHLGI 57
DB 31 TPLGASSTLPSFLKLCLEQVRKIQGDGALOEKLVSECATYKLCHEBELVILGSHLGI 90
QY 58 WAPLSSCSQALQAGCISQLSHGLFLYQGLQALLEGISPELGPITLDTQLDVADPATTI 117
DB 91 WAPLSSCSQALQAGCISQLSHGLFLYQGLQALLEGISPELGPITLDTQLDVADPATTI 150
QY 118 WQNEBELGMAPALOPTOGAMPAPAFASAFORRAGGVIVASHLQSFLEVSRYVLRHLAQP 174
DB 151 WQNEBELGMAPALOPTOGAMPAPAFASAFORRAGGVIVASHLQSFLEVSRYVLRHLAQP 207

RESULT 3
CSF3_FELCA STANDARD; PRT; 194 AA.
AC 002708;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor precursor (G-CSF) (Fragment).

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GN Name=CSF3;
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX NCBI_Taxid=9685;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=European Shorthair; TISSUE=Lung;
RX MEDLINE=21389237; PubMed=11497496; DOI=10.1006/cyto.2001.0910;
RA Dunham S.P., Onions D.E.;
RT Isolation, nucleotide sequence and expression of a cDNA encoding
RT feline granulocyte colony-stimulating factor.;
RL Cytokine 14:347-351(2001).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes (by similarity).
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC or send an email to license@sib-sib.ch).
CC -----
DR EMBL: Y08558; CAA69853.1; -.
DR PIR: T09255; T09255.
DR HSSP: P09919; 1RKG.
DR InterPro: IPR009079; 4 helix cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR InterPro: IPR003574; Interleukin_6.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
DR CYTOKINE; Glycoprotein; Growth factor; Signal.
FT NON_TER 1
FT SIGNAL 1 20
FT CHAIN 21 194
FT DISULFID 56 62
FT DISULFID 84 94
FT CARBOHYD 153 153
SQ SEQUENCE 194 AA; 21154 MW; F72B7AB3DAE7385E CRC64;

Query Match 83.0%; Score 744; DB 1; Length 194;
Best Local Similarity 81.0%; Pred. No. 4.2e-60;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 1 TPLGASSTLPSFLKLCLEQVRKIQGDGALOEK---CATYKLCHEBELVILGSHLGI 60
DB 21 TPLGASSTLPSFLKLCLEQVRKIQGDGALOEKCAHKKLCHEBELVILGSHLGI 80
QY 61 LSSCSQALQAGCISQLSHGLFLYQGLQALLEGISPELGPITLDTQLDVADPATTI 120
DB 81 LSSCSQALQAGCISQLSHGLFLYQGLQALLEGISPELGPITLDTQLDVADPATTI 140
QY 121 MEELGMAPALOPTOGAMPAPAFASAFORRAGGVIVASHLQSFLEVSRYVLRHLAQP 174
DB 141 MEELGMAPALOPTOGAMPAPAFASAFORRAGGVIVASHLQSFLEVSRYVLRHLAQP 194

RESULT 4
Q9GUUO PRELIMINARY; PRT; 195 AA.

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AC O9GJUD;
DT 01-MAR-2001 (TREMUREL.16, Last Created)
DT 01-MAR-2001 (TREMUREL.16, Last sequence update)
DT 05-JUL-2004 (TREMUREL.27, Last annotation update)
DE Granulocyte colony-stimulating factor precursor.
GN Name=G-CSF;
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Plissipedia; Felidae; Felis.
RN NCBI_TaxID=9685;
RX SEQUENCE FROM N.A.
RP MEDLINE=15151548; PubMed=11675019; DOI=10.1016/S0378-1119(01)00575-3;
RA Yamamoto A., Iwata A., Tuchiya K., Katsumata A., Oishi K., Saito T.,
RT Tsujimoto H., Hasegawa A., Ueda S.;
RT "Molecular cloning and expression of the cDNA encoding feline
RT Granulocyte colony-stimulating factor.";
RL Gene 274:263-269(2001).
DR EMBL: AB042553; BAB17789.1; -.
DR EMBL: AB042553; BAB17789.1; -.
DR HSSP: P35834; IRGC.
DR GO: GO:0005576; C:extracellular; IEA.
DR GO: GO:0005125; F:Cytokine activity; IEA.
DR GO: GO:0005138; F:Interleukin-6 receptor binding; IEA.
DR GO: GO:0006955; P:Immune response; IEA.
DR InterPro: IPR009079; 4 helix cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR InterPro: IPR003574; Interleukin_6.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR PRODOM: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
KW Signal.
FT SIGNAL.
SQ SEQUENCE 195 AA; 21255 MW; 544C68209412FCF CRC64;

Query Match 83.0%; Score 744; DB 2; Length 195;
Best Local Similarity 81.0%; Pred. No. 4.2e-60;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 1 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEPELVLLGHSIGIPMAP 60
DB 22 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEPELVLLGHSIGIPMAP 81
QY 61 LSSCPQALQLAGCLSQLHSGFLYQGLQALLEGISPELGPTLDTLQLDVADPATIIMQ 120
DB 82 LSSCPQALQLAGCLSQLHSGFLYQGLQALLEGISPELGPTLDTLQLDVADPATIIMQ 141
QY 121 MEELGAPALQPTQGAMPAPAFAPQRRAGGVVASHLSQFLVSVRYVRLHAP 174
DB 142 MEDVGAPAVPPTQGTMPFTSAFORRAGGTLVASNLSFLVAVYRALRHFTKP 195

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RA O'Brien P.M., Seow H.F., Rochel J.S., Wood P.R.;
RT "Cloning and sequencing of an ovine granulocyte colony-stimulating
RT factor cDNA.";
RL DNA Seq. 4:339-342(1994).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes (By similarity).
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: L07939; AAA68006.1; -.
DR PIR: T10268; T10268.
DR HSSP: P09919; IRHG.
DR InterPro: IPR009079; 4 helix cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR PRODOM: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
KW Cytokine; Glycoprotein; Growth factor.
FT DISULFID 36 42 By similarity.
FT DISULFID 64 74 By similarity.
FT CARBOHYD 133 133 O-linked (GalNAc...) (By similarity).
SQ SEQUENCE 174 AA; 18806 MW; BASAAB8FD3ACD1E CRC64;

Query Match 82.4%; Score 738; DB 1; Length 174;
Best Local Similarity 82.2%; Pred. No. 1.3e-59;
Matches 143; Conservative 10; Mismatches 21; Indels 0; Gaps 0;

QY 1 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEPELVLLGHSIGIPMAP 60
DB 1 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEPELVLLGHSIGIPMAP 60
QY 61 LSSCPQALQLAGCLSQLHSGFLYQGLQALLEGISPELGPTLDTLQLDVADPATIIMQ 120
DB 61 LSSCPQALQLAGCLSQLHSGFLYQGLQALLEGISPELGPTLDTLQLDVADPATIIMQ 120
QY 121 MEELGAPALQPTQGAMPAPAFAPQRRAGGVVASHLSQFLVSVRYVRLHAP 174
DB 121 MEDVGAPAVPPTQGTMPFTSAFORRAGGTLVASNLSFLVAVYRALRHFTKP 174

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RESULT 5
CSF3_SHEEP STANDARD; PRT; 174 AA.
ID CSF3_SHEEP
AC 028746;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor (G-CSF).
GN Name=CSF3;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
RN NCBI_TaxID=9940;
RX SEQUENCE FROM N.A.
RP MEDLINE=95102116; PubMed=7528579;

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RESULT 6
CSF3_CANFA STANDARD; PRT; 175 AA.
ID CSF3_CANFA
AC P35834;
DT 01-JUN-1994 (Rel. 29, Created)
DT 01-JUN-1994 (Rel. 29, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Granulocyte colony-stimulating factor (G-CSF).
GN Name=CSF3;
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Plissipedia; Canidae; Canis.
RN NCBI_TaxID=9615;
RX X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
RP MEDLINE=94076341; PubMed=7504736;
RA Lovejoy B., Cascio D., Eisenberg D.;

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RT "Crystal structure of canine and bovine granulocyte-colony stimulating factor (G-CSF).".

RT J. Mol. Biol. 234:640-653 (1993).

CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are cytokines that act in hematopoiesis by controlling the production, differentiation, and function of 2 related white cell populations of the blood, the granulocytes and the monocytes-macrophages. This CSF induces granulocytes.

CC -1- SUBUNIT: Monomer.

CC -1- SUBCELLULAR LOCATION: Secreted.

CC -1- PTM: O-glycosylated.

CC -1- SIMILARITY: Belongs to the IL-6 superfamily.

DR PDB: 1BGD; X-ray; @=1-175.

DR InterPro: IPR009079; 4 helix cytokine.

DR InterPro: IPR003629; GCSF\_MGF.

DR InterPro: IPR003573; IL6\_MGF\_GCSF.

DR Pfam: PF00489; IL6; 1.

DR PRINTS: PR00433; IL6GCSFMGF.

DR PRODOM: PD008388; GCSF\_MGF; 1.

DR SMART: SM00126; IL6; 1.

DR PROSITE: PS00254; INTERLEUKIN\_6; 1.

KM 3D-structure; Cytokine; Glycoprotein; Growth factor.

FT DISULFID 37 43

FT CARBOHYD 65 75

FT STRAND 134 134 O-linked (GalNAc. .) (By similarity).

FT HELIX 10 10

FT HELIX 12 39

FT HELIX 45 55

FT TURN 56 56

FT HELIX 63 65

FT TURN 67 69

FT HELIX 72 92

FT TURN 93 95

FT TURN 98 100

FT HELIX 101 125

FT TURN 126 126

FT HELIX 144 171

FT TURN 172 172

FT STRAND 173 173

SO SEQUENCE 175 AA; 18858 MW; 28C26B24990C6DB3 CRC64;

Query Match 81.9%; Score 724; DB 1; Length 175;  
Best Local Similarity 80.9%; Pred. No. 3,1e-59;  
Matches 140; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 2 PLGPAASSLPQSFLLKCLEVQRKIQGDGALQEKLCATYQLCHPEELVILGHSIGIPWAPL 61

DB 3 PLGPTGLPQSFLLKCLEVQRKIQGDGALQEKLCATYQLCHPEELVILGHSIGIPWAPL 62

QY 62 SSCPSQALQIAGCLSQLHSGFLVYQGLQALLEGISPELGPITLDTQLDVADPATTIWOQ 121

DB 63 SSCPSQALQIAGCLSQLHSGFLVYQGLQALLEGISPELGPITLDTQLDVADPATTIWOQ 122

QY 122 BELGMADPALOPTQGMAMPAPASAFORRAGVIVASHQSLFVSVYKRLHQAQ 174

DB 123 EDLGMAVAVPPTQGMAMPAPASAFORRAGVIVASHQSLFVSVYKRLHQAQ 175

RESULT 7

CSF3\_BOVIN STANDARD; PRT; 195 AA.

ID CSF3\_BOVIN

AC P35833; O9TV89; Rel. 29, Created)

DT 01-JUN-1994 (Rel. 40, Last sequence update)

DT 16-OCT-2001 (Rel. 45, Last annotation update)

DE Granulocyte colony-stimulating factor precursor (G-CSF).

GN Name=CSF3; Synonyms=GCSF;

OS Bos taurus (Bovine).

OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

OC Bovinae; Bos.

OC NCBI\_TaxId=9913;

RM [1] SEQUENCE FROM N.A.

RC STRAIN=Holstein;

RA Helard M., Kehrl M.B. Jr.;

RT "Cloning, sequencing, and analysis of cDNA encoding bovine granulocyte colony stimulating factor.";

RL Submitted (SEP-1998) to the EMBL/GenBank/DBJ databases.

RM [2]

RP X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).

RX MEDLINE=94076341; PubMed=7504736;

RA Lovejoy B., Cascio D., Eisenberg D.;

RT "Crystal structure of canine and bovine granulocyte-colony stimulating factor (G-CSF).".

RT J. Mol. Biol. 234:640-653 (1993).

CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are cytokines that act in hematopoiesis by controlling the production, differentiation, and function of 2 related white cell populations of the blood, the granulocytes and the monocytes-macrophages. This CSF induces granulocytes.

CC -1- SUBUNIT: Monomer.

CC -1- SUBCELLULAR LOCATION: Secreted.

CC -1- PTM: O-glycosylated.

CC -1- SIMILARITY: Belongs to the IL-6 superfamily.

CC -----

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CC -----

DR EMBL: AF092533; AADI6102.1; -

DR PDB: 1BGD; X-ray; @=2-195.

DR InterPro: IPR003079; 4 helix cytokine.

DR InterPro: IPR003629; GCSF\_MGF.

DR InterPro: IPR003573; IL6\_MGF\_GCSF.

DR Pfam: PF00489; IL6; 1.

DR PRINTS: PR00433; IL6GCSFMGF.

DR PRODOM: PD008388; GCSF\_MGF; 1.

DR SMART: SM00126; IL6; 1.

DR PROSITE: PS00254; INTERLEUKIN\_6; 1.

KM 3D-structure; Cytokine; Glycoprotein; Growth factor; Signal.

FT SIGNAL 1 21

FT CHAIN 22 195 Granulocyte colony-stimulating factor.

FT DISULFID 57 63

FT CARBOHYD 85 95

FT CONFLICT 154 154

FT HELIX 93 94 O-linked (GalNAc. .) (By similarity).

FT HELIX 32 60 TS -> RG (in Ref. 2).

FT TURN 65 69

FT HELIX 70 71

FT TURN 72 75

FT HELIX 76 76

FT TURN 83 85

FT HELIX 87 89

FT HELIX 92 112

FT TURN 113 115

FT TURN 118 120

FT HELIX 121 145

FT HELIX 164 191

FT TURN 192 192

SO SEQUENCE 195 AA; 21431 MW; 8C06119E4ADFBA73 CRC64;

Query Match 81.1%; Score 727; DB 1; Length 195;  
Best Local Similarity 81.0%; Pred. No. 1,5e-58;  
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 1 TPLGPAASSLPQSFLLKCLEVQRKIQGDGALQEKLCATYQLCHPEELVILGHSIGIPWAP 60

DB 22 TPLGPAASSLPQSFLLKCLEVQRKIQGDGALQEKLCATYQLCHPEELVILGHSIGIPWAP 81

QY 61 LSSCPQALQIAGCLSQLHSGFLVYQGLQALLEGISPELGPITLDTQLDVADPATTIWOQ 120

Db 82 LSSSSSLQITSLTGLNGLFLYOGLLQALAGISPELPTLDTLDVDFATNTMLQ 141  
 QY 121 MEIGMAPALOPTGAMPAPASAFORRAGVYVASHQSFLEVSRYRLRHAAOP 174  
 Db 142 MEDIGAPAVOPTGAMPFTSAFORRAGVYVASHQSFLEVSRYRLRHAAOP 195

## RESULT 8

CSF3\_PIG STANDARD; PRT; 195 AA.  
 ID CSF3\_PIG 002837; 019180;  
 AC 002837; 019180; (Rel. 36, Created)  
 DT 15-JUL-1998 (Rel. 36, Last sequence update)  
 DT 30-MAY-2000 (Rel. 39, Last sequence update)  
 DT 05-JUL-2004 (Rel. 44, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF).  
 GN Name=CSF3;  
 OS Sus scrofa (Pig).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Sus.  
 NC NCBI\_TaxID=9823;  
 RP SEQUENCE FROM N.A.  
 RA Kulmburg P.;  
 RL Submitted (JAN-1997) to the EMBL/GenBank/DBJ databases.  
 RN [2]  
 RC TISSUE=Liver;  
 RA Glosier S.E., Sandeman R.M., Strom A.D.G.;  
 RT "Cloning of a cDNA and gene encoding porcine granulocyte-colony  
 stimulating factor.";  
 RT Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 cytokines that act in hematopoiesis by controlling the production,  
 differentiation, and function of 2 related white cell populations  
 of the blood, the granulocytes and the monocytes-macrophages. This  
 CSF induces granulocytes (By similarity).  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- PTM: O-glycosylated (By similarity).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
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 CC -----  
 DR EMBL, Y10494; CAA7518.1; -;  
 DR EMBL, U64882; AAB70701.1; -;  
 DR EMBL, U6481; AAB70700.1; -;  
 DR HSSP, P09919; 1RHG.  
 DR InterPro: IPR009079; 4 helix cytokine.  
 DR InterPro: IPR003629; GCSF\_MGF.  
 DR InterPro: IPR003573; IL6\_MGF\_GCSF.  
 DR Pfam, PF00469; IL6; 1.  
 DR PRINTS, PR00433; IL6GCSFMGF.  
 DR PRODOM, PD008388; GCSF\_MGF; 1.  
 DR SMART, SM00126; IL6; 1.  
 DR PROSITE, PS00254; INTERLEUKIN\_6; 1.  
 KW Cytokine; Glycoprotein; Growth factor; Signal.  
 FT SIGNAL 1 21 Potential.  
 FT CHAIN 22 195 Granulocyte colony-stimulating factor.  
 FT DISULFID 57 63 By similarity.  
 FT DISULFID 85 95 By similarity.  
 FT CARBOHYD 154 154 O-linked (GalNAc... ) (By similarity).  
 FT CONFLICT 123 123 A -> R (in Ref. 1).  
 SO SEQUENCE 195 AA; 21214 MW; 84787F20DB0AEAC CRC64;

Query Match 78.3%; Score 702; DB 1; Length 195;  
 Best Local Similarity 79.2%; Pred. No. 3e-56;

Matches 137; Conservative 11; Mismatches 25; Indels 0; Gaps 0;  
 QY 2 PLGPASSLPQSFLLKLEQVRKIQGGAALQKCATYKCHPEELVILGSHSIGIPAPL 61  
 Db 23 PLSPASSLPQSFLLKLEQVRKIQGGAALQKCATYKCHPEELVILGSHSIGIPAPL 82  
 QY 62 SSCSQALQITGLNGLHGLVLYOGLLQALAGISPELPTLDTLDVDFATNTMLQ 121  
 Db 83 SSCSQALQITGLNGLHGLVLYOGLLQALAGISPELPTLDTLDVDFATNTMLQ 142  
 QY 122 MEIGMAPALOPTGAMPAPASAFORRAGVYVASHQSFLEVSRYRLRHAAOP 174  
 Db 143 MEDIGAPAVOPTGAMPFTSAFORRAGVYVASHQSFLEVSRYRLRHAAOP 195

## RESULT 9

CSF3\_MOUSE STANDARD; PRT; 208 AA.  
 ID CSF3\_MOUSE 009920;  
 AC 009920; 01-MAR-1989 (Rel. 10, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 05-JUL-2004 (Rel. 44, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF).  
 GN Name=CsF3; Synonyms=Csf3;  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 NC NCBI\_TaxID=10090;  
 RP SEQUENCE FROM N.A.  
 RA MEDLINE=87017003; PubMed=3489940;  
 RA Teuchiya M., Amano S., Kaziro Y., Nagata S.;  
 RT "Isolation and characterization of the cDNA for murine granulocyte  
 colony-stimulating factor.";  
 RT Proc. Natl. Acad. Sci. U.S.A. 83:7633-7637(1986).  
 RL [2]  
 RN SEQUENCE FROM N.A.  
 RP MEDLINE=87190474; PubMed=3494605;  
 RA Teuchiya M., Kaziro Y., Nagata S.;  
 RT "The chromosomal gene structure for murine granulocyte colony-  
 stimulating factor.";  
 RT Eur. J. Biochem. 165:7-12(1987).  
 RL [3]  
 RN PARTIAL SEQUENCE.  
 RP PubMed=3501294;  
 RX Simpson R.J., Nice E.C., Nicola N.A.;  
 RA "Structural studies on the murine granulocyte colony-stimulating  
 factor.";  
 RT Biol. Chem. Hoppe-Seyler 368:1327-1331(1987).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 cytokines that act in hematopoiesis by controlling the production,  
 differentiation, and function of 2 related white cell populations  
 of the blood, the granulocytes and the monocytes-macrophages. This  
 CSF induces granulocytes.  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- PTM: O-glycosylated (By similarity).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
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 or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL, M13926; AAA7672.1; -;  
 DR EMBL, X05402; CAA28986.1; -;  
 DR PIR, A29536; A26496.  
 DR HSSP, P09919; 1RHG.  
 DR WGI, WGI:1339751; Csf3.  
 DR InterPro, IPR009079; 4\_helix\_cytokine.



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DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR Cytokine; Direct protein sequencing; Glycoprotein; Growth factor;
KW Signal.
FT SIGNAL 1 30
FT CHAIN 31 208 Granulocyte colony-stimulating factor.
FT DISULFID 72 78 By similarity.
FT DISULFID 100 110 By similarity.
FT CARBOHYD 169 169 O-linked (GalNAc...) (By similarity).
SQ SEQUENCE 208 AA; 22421 MW; 0BF3622135C906DB CRC64;

Query Match 71.5%; Score 641; DB 1; Length 208;
Best Local Similarity 75.9%; Pred. No. 1.2e-50;
Matches 129; Conservative 9; Mismatches 32; Indels 0; Gaps 0;

QY 3 LGPASPILQSPFLKLEQVRKIQGDGALQEXLCATYKLCHEBELVLGSHSIGIPWAPIS 62
DB 39 LPSPILPRSFLLKSLQEVQRKIQAGSVLEQLCATYKLCHEBELVLGSHSIGIPWAPIS 98
QY 63 SCPSQALQAGLSQHSGLFLYQGLQALAGISSELPGLPTDLDVADPATTIWOQME 122
DB 99 GCSQALQOQTCLSQLHSGFLCYQGLQALAGISSELPGLPTDLDVADPATTIWOQME 158
QY 123 ELGNAPALQPTGAMPAPAFASAFORRAGGVLVASHQSFLEVSRYVRLHIA 172
DB 159 NLGVAFTVQPTQSMAPAFASAFORRAGGVLVASHQSFLEVSRYVRLHIA 208

RESULT 10
P97712 PRELIMINARY; PRT; 214 AA.
ID P97712 PRELIMINARY; PRT; 214 AA.
AC P97712;
DT 01-MAY-1997 (TREMBLrel. 03, Created)
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Granulocyte colony stimulating factor.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97074656; PubMed=8917083; DOI=10.1016/0378-1119(96)00131-X;
RA Han S.W., Ramesh N., Osborne W.R.;
RT "Cloning and expression of the cdna encoding rat granulocyte colony-
stimulating factor.";
RL Gene 175:101-104 (1996).
DR EMBL; U75101; AAC52915.1; -.
DR PIR; JC5043; JCS043.
DR HSSP; P09919; IRHG.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0008083; F:growth factor activity; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 214 AA; 23659 MW; 29BB88B17B64C55 CRC64;

Query Match 70.8%; Score 634; DB 2; Length 214;
Best Local Similarity 73.8%; Pred. No. 5.6e-50;
Matches 127; Conservative 10; Mismatches 35; Indels 0; Gaps 0;

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QY 3 LGPASPILQSPFLKLEQVRKIQGDGALQEXLCATYKLCHEBELVLGSHSIGIPWAPIS 62
DB 30 LPSPILPRSFLLKSLQEVQRKIQAGSVLEQLCATYKLCHEBELVLGSHSIGIPWAPIS 89
QY 63 SCPSQALQAGLSQHSGLFLYQGLQALAGISSELPGLPTDLDVADPATTIWOQME 122
DB 90 GCSQALQOQTCLSQLHSGFLCYQGLQALAGISSELPGLPTDLDVADPATTIWOQME 149
QY 123 ELGNAPALQPTGAMPAPAFASAFORRAGGVLVASHQSFLEVSRYVRLHIA 174
DB 150 NLGVAFTVQPTQSMAPAFASAFORRAGGVLVASHQSFLEVSRYVRLHIA 201

RESULT 11
QMKKE0 PRELIMINARY; PRT; 127 AA.
ID QMKKE0 PRELIMINARY; PRT; 127 AA.
AC QMKKE0;
DT 01-OCT-2002 (TREMBLrel. 22, Created)
DT 01-OCT-2002 (TREMBLrel. 22, Last sequence update)
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Granulocyte colony-stimulating factor.
GN Name=G-CSF;
OS Equus caballus (Horse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX NCBI_TaxID=9796;
RN [1]
RP SEQUENCE FROM N.A.
RA Notonha L.E., Takafuji V.A., Sharova L.V., Crisman M.V., Howard R.D.;
RL Submitted (APR-2002) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF503365; AAM34205.1; -.
DR HSSP; P35833; IBGC.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0008083; F:growth factor activity; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 127 AA; 13657 MW; 25559C2569802077 CRC64;

Query Match 57.0%; Score 511; DB 2; Length 127;
Best Local Similarity 79.5%; Pred. No. 5.9e-39;
Matches 101; Conservative 9; Mismatches 17; Indels 0; Gaps 0;

QY 48 VLGHSLGIPWAPISSCPSQALQAGLSQHSGLFLYQGLQALAGISSELPGLPTDLD 107
DB 1 MLGHSLGIPWAPISSCPSQALQAGLSQHSGLFLYQGLQALAGISSELPGLPTDLD 60
QY 108 LDVADPATTIWOQMEELGNAPALQPTGAMPAPAFASAFORRAGGVLVASHQSFLEVSRYV 167
DB 61 LDVADPATTIWOQMEDLVAPVQPTGMPETPFSAPORRAGGVLVASHQSFLEVSRYV 120
QY 168 LRLHIAOP 174
DB 121 LRYLAEP 127

RESULT 12
MGF_CHICK STANDARD; PRT; 201 AA.
AC P13854;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Myelomonocytic growth factor precursor (MGF).
OS Gallus gallus (Chicken).

```



CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 CC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 CC Gallus.  
 OK NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=89231616; PubMed=2785450;  
 RA Leutz A., Damm K., Sterneck E., Kowenz E., Nees S., Frank R.,  
 RA Gausepohl H., Pan Y.-C.E., Smart J., Hayman M., Graf T.;  
 RT "Molecular cloning of the chicken myelomonocytic growth factor (CMGF)  
 RT reveals relationship to Interleukin 6 and granulocyte colony  
 RT stimulating factor.";  
 RL EMBL J. 8:175-181(1989).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=92195319; PubMed=1549124;  
 RA Sterneck E., Blatter C., Graf T., Leutz A.;  
 RT "Structure of the chicken myelomonocytic growth factor gene and  
 RT specific activation of its promoter in avian myelomonocytic cells by  
 RT protein kinases.";  
 RL Mol. Cell. Biol. 12:1728-1735(1992).  
 CC -1- FUNCTION: Hematopoietic growth factor that stimulates the  
 CC proliferation and colony formation of normal and transformed avian  
 CC cells of the myeloid lineage.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL Outstation -  
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 CC -----  
 DR EMBL; M85034; AAA48694.1; -;  
 DR EMBL; X14477; CAA32639.1; -;  
 DR PIR; A42247; A42247.  
 DR HSSP; P09319; 1RHG.  
 DR InterPro; IPR006079; 4\_helix\_cytokine.  
 DR InterPro; IPR003629; GCSF\_MGF.  
 DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
 DR InterPro; IPR003574; Interleukin\_6.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PR00433; IL6GCSFMGF.  
 DR PRINTS; PR00434; INTERLEUKIN6.  
 DR PRODOM; PD008388; GCSF\_MGF; 1.  
 DR PRODOM; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR GlycoProtein; Growth factor; Signal.  
 FT SIGNAL 1 23  
 FT CHAIN 24 201  
 FT DISULFID 61 67  
 FT DISULFID 89 99  
 FT CARBOHYD 123 123  
 FT CARBOHYD 137 137  
 SEQUENCE 201 AA; 22373 MW; 240ABDD21B4244A6 CRC64;  
 SQ  
 Query Match 33.9%; Score 304; DB 1; Length 201;  
 Best Local Similarity 40.6%; Pred. No. 9.1e-20;  
 Matches 67; Conservative 28; Mismatches 68; Indels 2; Gaps 1;  
 QY 11 QSTLKLCEVRYKIOGSGALQELCTATYLCHEBEVLVLLGHSIGIMAPLSSCPALQ 70  
 DB 36 QLFHLNLTETRIKIRGVALQRAVCTFQLCTEEELQVLQPPHVLQAPLDQCHRRGFQ 95  
 QY 71 LAGCLSLHSGGLFLYQGLQALQEGISPELPTLDTLQDLVADPATTTIWOOMEELGNAPAL 130  
 DB 96 ABEVCFQIRAGLHAYHDSLGAVALRLLENHTIVITLQDLDAANSSNQQQMEDLGLDTVT 155  
 QY 131 QPTQ--GAMPAPASAFORRAGGVAVASHLOSFLVSVRYVRLHQAQ 173

DB 156 LPABQSPPTFGSPFOQVGGFFILANFORLETAAYRALRHIA 200  
 RESULT 13  
 ID Q90Y10 PRELIMINARY; PRT; 241 AA.  
 AC Q90Y10;  
 DT 01-DEC-2001 (TrEMBLrel. 19, Created)  
 DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)  
 DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)  
 DE Interleukin-6 precursor.  
 OS Name=IL-6;  
 GN Gallus gallus (Chicken).  
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 CC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 CC Gallus.  
 OK NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Schneider K., Klaas R., Kaspers B., Staeheli P.;  
 RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P., Rothwell L., Galyov E.E., Barrow P.A., Burnside J.,  
 RA Wigley P.;  
 RT "Differential cytokine expression in avian cells in response to  
 RT invasion by Salmonella typhimurium, Salmonella enteritidis and  
 RT Salmonella gallinarum.";  
 RL Microbiology 146:3217-3226(2000).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P.;  
 RL Submitted (JAN-2003) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AJ309540; CAC40812.1; -;  
 DR EMBL; AJ250838; CAC15566.2; -;  
 DR HSSP; P05231; 1ALU.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005125; F:cytokine activity; IEA.  
 DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.  
 DR GO; GO:0006955; P:immune response; IEA.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PR00433; IL6GCSFMGF.  
 DR PRINTS; PR00434; INTERLEUKIN6.  
 DR PRODOM; PD008388; GCSF\_MGF; 1.  
 DR PRODOM; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR Signal.  
 FT SIGNAL 1 47  
 FT CHAIN 48 241  
 FT CHAIN 241 241  
 SEQUENCE 241 AA; 26790 MW; 657F8049F25BD2F8 CRC64;  
 SQ  
 Query Match 12.4%; Score 111; DB 2; Length 241;  
 Best Local Similarity 22.2%; Pred. No. 0.053;  
 Matches 46; Conservative 35; Mismatches 74; Indels 52; Gaps 7;  
 QY 3 LGPASTLP-----QSFLKCLEQVAKIOGDAALQELCTATYLCG 43  
 DB 41 LPPAAVPLPAAADSSGVGLSEBAGARALDCELIANVLDRAVQLQDQCKRTVCE 100  
 QY 44 PBEVLVLLGHSIGIPWAPLSSCPSPALQALG-----CLQSLHSGGLFLYQGLQALQEGISPE 98  
 DB 101 NSMEMLVRRNNLPL-----KVTEEDGCLLAGPBEKCLTGLSSGLFAFYLERIQTSPDS 156  
 QY 99 LGPTLDTLQDLVADPATTTIWOOMEELGNAPALQPTQGANPAPASAFORRAGGVL----- 152  
 DB 157 EKQWVESLCYSTKHLAATIRQNV-----INPEVLP--DSAQKSLANLNSDKW 206  
 QY 153 ---VASHL-----QSFLVSVRYVRLH 171  
 DB 207 IETKTHLILRDPISFMETKTVAAVRYL 233

```
RESULT 14
Q8MJ75 PRELIMINARY; PRT; 212 AA.
AC Q8MJ75;
DT 01-OCT-2002 (TREMblrel. 22, Created)
DT 01-OCT-2002 (TREMblrel. 22, Last sequence update)
DT 01-MAR-2004 (TREMblrel. 26, Last annotation update)
DE IL-6.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OC NCBI_Taxid=9823;
RN (1)
RP SEQUENCE FROM N.A.
RA Lee D., Yoo H., Choi I.;
RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF518322; NAM74938.1; -.
DR HSSP; P05231; IALU.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:Cytokine activity; IEA.
DR GO; GO:0005138; F:Interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:Immune response; IEA.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRODOM; PD004356; Interleukin_6; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 212 AA; 23881 MW; 1F540E7030BCFD77 CRC64;

Query Match 12.3%; Score 110.5; DB 2; Length 212;
Best Local Similarity 23.3%; Pred. No. 0.052; Indels 5; Gaps 3;
Matches 37; Conservative 32; Mismatches 85;

QY 16 KCLEQVRKIQDGAALQEKLCATYKLCHEPELVLLGHSIGIP-WAPLSSCPQALQLAGCLSLA 74
DB 52 KTELKIKYILKISAMRKEMCEKYEKCNSEKVLANNLNPMAEKDGCFCGFGNQCETC 111
QY 75 LSGHSGFLYQGLQALAGISPELPTLDLTQLDVADPATTTIWQMBELGNAPALQPTGA 133
DB 112 LMRITTTGLVEFOIYLDYLOKEVSNKGNVEAVQISTKALIQTLRQKGNPKDPATTPNPTT 171
QY 134 -QGMPAFAS--AFQBRAGVTVASHLOSFLVSVYRVR 169
DB 172 NAGLLDKLQSONEMWKNKTITILRSLEDFLOFSIRAIR 210

RESULT 15
Q9XT80 PRELIMINARY; PRT; 208 AA.
AC Q9XT80;
DT 01-NOV-1999 (TREMblrel. 12, Created)
DT 01-NOV-1999 (TREMblrel. 12, Last sequence update)
DT 01-MAR-2004 (TREMblrel. 26, Last annotation update)
DE Interleukin 6.
OS Delphinapterus leucas (Beluga whale).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti;
OC Monodontidae; Delphinapterus.
OC NCBI_Taxid=9749;
RN (1)
RP SEQUENCE FROM N.A.
RA MEDLINE=20141864; Pubmed=10678396; DOI=10.1016/S0165-2427(99)00150-6;
RA St-Laurent G., Archambault D.;
RT "Molecular cloning, phylogenetic analysis and expression of beluga
RT whale (Delphinapterus leucas) interleukin 6.";
RL Vet. Immunol. Immunopathol. 73:31-44(2000).
DR EMBL; AF076643; AAD42929.1; -.
DR HSSP; P05231; IALU.
DR GO; GO:0005576; C:extracellular; IEA.
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DR GO; GO:0005125; F:Cytokine activity; IEA.
DR GO; GO:0005138; F:Interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:Immune response; IEA.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRODOM; PD004356; Interleukin_6; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 208 AA; 23456 MW; 81CC85C6E80389C4 CRC64;

Query Match 12.1%; Score 108; DB 2; Length 208;
Best Local Similarity 21.3%; Pred. No. 0.086; Indels 6; Gaps 2;
Matches 33; Conservative 35; Mismatches 81;

QY 21 VRKIQDGAALQEKLCATYKLCHEPELVLLGHSIGIP-WAPLSSCPQALQLAGCLSLA 79
DB 52 IKYILGKISAMRKEMCEKYEKCNSEKVLANNLNPMAEKDGCFCGFGNQCETCLMRIT 111
QY 80 SGLFLYQGLQALAGISPELPTLDLTQLDVADPATTTIWQMBELGNAPALQPTGA-- 136
DB 112 TGLLEYQIYLDYLONEYEGDKSIEAVQISTKALQILRQKGNPKDPDEVTTPDPPTNASLM 171
QY 137 -MPAFASAFQBRAGVTVASHLOSFLVSVYRVR 169
DB 172 NNLOSQNDMMWKNKTITILRSLEDFLOFSIRAIR 206
```

Search completed: July 9, 2005, 12:53:58  
Job time : 112.181 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 9, 2005, 12:35:24 ; Search time 13.5387 Seconds  
(without alignments)  
1243.691 Million cell updates/sec

Title: US-10-750-797-2

Perfect score: 901

Sequence: 1 MTPGLPASPSPQSLFKLKE.....SHLOSFLVSVYRLNHLAQP 175

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database :  
1: p1r1:\*  
2: p1r2:\*  
3: p1r3:\*  
4: p1r4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	896	99.4	204	1 F0HUGL	granulocyte colony
2	884.5	98.2	207	2 A24573	granulocyte colony
3	744	82.6	194	2 T09255	granulocyte colony
4	738	81.9	174	2 T10268	granulocyte colony
5	642	71.3	208	2 A26496	granulocyte colony
6	635	70.5	214	2 JC5043	granulocyte colony
7	304	33.7	201	2 A42247	myelomonocytic gro
8	106.5	11.8	212	2 I46590	interleukin 6 - pi
9	106.5	11.8	212	2 I46621	prointerleukin 6 -
10	100	11.1	208	2 T09216	interleukin-6 prec
11	94	10.4	345	2 C82270	hypothetical prote
12	89.5	9.9	2175	1 S03170	homeotic protein c
13	88.5	9.8	666	2 A87577	oligopeptide trans
14	88.5	9.8	786	2 F83292	probable sensor/re
15	86	9.5	208	1 A56610	interleukin-6 prec
16	86	9.5	502	2 S46506	H+-transporting tw
17	85	9.4	207	2 I46084	interleukin 6 - ca
18	84	9.3	274	1 C69362	aryl hydrocarbon r
19	83.5	9.3	846	2 JC7721	conserved hypothet
20	80.5	8.9	406	2 B72766	probable threonyl-
21	80	8.9	474	2 D75550	probable D-alanyl-
22	79.5	8.8	431	2 T19623	hypothetical prote
23	79.5	8.8	423	2 AC3553	hypothetical prote
24	78	8.7	208	1 S29549	4-aminobutyrate tr
25	78	8.7	316	2 H82958	interleukin-6 - sh
26	77.5	8.6	653	2 C82580	homoserine kinase
27	77	8.5	974	2 AC2076	oligopeptide trans
28	76.5	8.5	195	2 JH0680	two-component hybr
29					ciliary neurotroph

30	76.5	8.5	506	2 T07942	probable squalene
31	76	8.4	469	2 AD1926	hypothetical prote
32	76	8.4	1704	2 A59188	ATP-binding caset
33	76	8.4	1704	2 S71363	probable ATP-bind
34	75.5	8.4	156	2 J01138	RNA methyltransfe
35	75.5	8.4	3027	2 J01917	polyprotein - pars
36	75	8.3	199	1 B38285	interleukin-11 pre
37	75	8.3	219	1 B38285	hypothetical prote
38	75	8.3	245	2 E70583	hypothetical prote
39	75	8.3	472	2 A70951	hypothetical prote
40	74.5	8.3	212	1 IYHUB2	interleukin-6 prec
41	74.5	8.3	254	2 S34724	probable oxidoredu
42	74.5	8.3	920	2 UC7313	aryl hydrocarbon r
43	74	8.2	367	2 I39172	cyclin-dependent k
44	74	8.2	453	2 H87373	hypothetical prote
45	74	8.2	638	2 A36929	virulence regulato

#### ALIGNMENTS

##### RESULT 1

##### F0HUGL

granulocyte colony-stimulating factor precursor - human

N:Alternate names: colony-stimulating factor 3; G-CSF

C:Species: Homo sapiens (man)

C>Date: 30-Jun-1988 #sequence revision 18-Aug-1995 #text\_change 09-Jul-2004

C:Accession: A25093; A49796; A47587; S68331

R:Nagata, S.; Tsuchiya, M.; Asano, S.; Yamamoto, O.; Hirata, Y.; Kubota, N.; Oheda, M.;

EMBO J. 5, 575-581, 1986

A>Title: The chromosomal gene structure and two mRNAs for human granulocyte colony-stim

A:Reference number: A25093; MUID:86220137; PMID:2423327

A:Accession: A25093

A:Molecule type: DNA

A:Residues: 1-204 <NAG>

A:Cross-References: UNIPROT:P09919; EMBL:X03656; EMBL:X03655; NID:g31693; PID:CAA27290

R:Devlin, J.J.; Devlin, P.E.; Myambo, K.; Lilly, M.B.; Rado, T.A.; Warren, M.K.

J. Leukoc. Biol. 41, 302-306, 1987

A>Title: Expression of granulocyte colony-stimulating factor by human cell lines.

A:Reference number: A49796; MUID:87196936; PMID:3494801

A:Accession: A49796

A:Molecule type: mRNA

A:Residues: 1-204 <DEV>

A:Cross-References: GB:M17706; NID:g183040; PID:AAA5882.1; PID:g183041

R:Souza, L.M.; Boone, T.C.; Gabriello, J.; Lai, P.H.; Zeebo, K.M.; Murdoch, D.C.; Chazi

Science 232, 61-65, 1986

A>Title: Recombinant human granulocyte colony-stimulating factor: effects on normal and

A:Reference number: A47587; MUID:86151684; PMID:2420009

A:Accession: A47587

A:Molecule type: mRNA

A:Residues: 19-204 <SOU>

A:Cross-References: GB:M13008; NID:g183044; PID:AAA03056.1; PID:g183045

R:Hantlu, M.; Horan, T.; Arakawa, T.; Le, U.; Katata, V.; Rohde, M.F.

Arch. Biochem. Biophys. 324, 344-356, 1995

A>Title: Extracellular domain of granulocyte-colony stimulating factor receptor.

A:Reference number: S68331; MUID:96133662; PMID:8554326

A:Accession: S68331

A:Molecule type: protein

A:Residues: 'M', 31-46 <HAN>

A:Genes: GDB:CSF3

A:Cross-References: GDB:119083; OMIM:138970

A:Map position: 17q11.2-17q12

A:Functions: 14/1; 65/3; 101/3; 150/3

C:Function:

A:Description: stimulates the differentiation and proliferation of hematopoietic progen

C:Keywords: cytokine; glycoprotein; growth factor; macrophage; monomer

F:1-30/Domain: signal sequence #status predicted <SIG>

F:31-204/Product: granulocyte colony-stimulating factor #status predicted <MAT>

F:66-72,94-104/Diulfide bonds: #status predicted

Query Match 99.4%; Score 896; DB 1; Length 204;  
 Best Local Similarity 100.0%; Pred. No. 3,7e-78;  
 Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 61  
 DB 31 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 90  
 QY 62 LSSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTIWOQ 121  
 DB 91 LSSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTIWOQ 150  
 QY 122 MEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 175  
 DB 151 MEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 204

## RESULT 2

A24573  
 granulocyte colony-stimulating factor precursor variant splice form CHU-2 - human

N/Alternate names: colony-stimulating factor 3; G-CSF  
 C/Species: Homo sapiens (man)  
 C/Date: 30-Jun-1988 #sequence\_revision 30-Jun-1988 #text\_change 09-Jul-2004  
 C/Accession: A24573  
 R/Negata, S.; Tsuchiya, M.; Asano, S.; Kaziro, Y.; Yamazaki, T.; Yamamoto, O.; Hirata, Y.  
 Nature 319, 415-418, 1986  
 A/Title: Molecular cloning and expression of cDNA for human granulocyte colony-stimulating factor  
 A/Reference number: A24573; MUID:86118679; PMID:3484805  
 A/Accession: A24573  
 A/Molecule type: mRNA  
 A/Residues: 1-207 <N>G>  
 A/Cross-references: UNIPROT:P09919; EMBL:X03438; NID:G31689; PIDN:CAA27168.1; PID:G31690  
 C/Comment: This variant splice form is not expressed in three other cell lines and may be a gene.  
 C/Genetics:  
 A/Gene: GDB:CSF3  
 A/Cross-references: GDB:119083; OMIM:138970  
 A/Map position: 17q11.2-17q12  
 A/Introns: 14/1; 68/3; 104/3; 153/3  
 C/Superfamily: Interleukin-6  
 C/Keywords: cytokine; glycoprotein; growth factor; macrophage; monomer  
 F/1-30/Domain: signal sequence #status predicted <SIG>  
 F/31-207/Product: granulocyte colony-stimulating factor variant splice form CHU-2 #status predicted  
 F/69-75,97-107/Disulfide bonds: #status predicted

Query Match 98.2%; Score 884.5; DB 2; Length 207;  
 Best Local Similarity 98.3%; Pred. No. 4.7e-77;  
 Matches 174; Conservative 0; Mismatches 0; Indels 3; Gaps 1;

QY 2 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 58  
 DB 31 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 90  
 QY 59 WAPLSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTI 118  
 DB 91 WAPLSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTI 150  
 QY 119 WQMEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 175  
 DB 151 WQMEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 207

## RESULT 3

T09255  
 granulocyte colony-stimulating factor precursor - cat (fragment)

C/Species: Felis silvestris catus (domestic cat)  
 C/Date: 11-Jun-1999 #sequence\_revision 11-Jun-1999 #text\_change 09-Jul-2004  
 C/Accession: T09255  
 R/Dunham, S.P.; Onions, D.E.  
 submitted to the EMBL Data Library, September 1996  
 A/Description: Cloning, sequence and expression of feline granulocyte colony stimulating factor  
 A/Reference number: Z16630  
 A/Accession: T09255  
 A/Status: preliminary; translated from GB/EMBL/DBJ

A/Molecule type: mRNA  
 A/Residues: 1-194 <DUN>  
 A/Cross-references: UNIPROT:O02708; EMBL:Y08558  
 C/Function:  
 A/Description: stimulates the differentiation and proliferation of hematopoietic progenit

C/Superfamily: Interleukin-6  
 C/Keywords: cytokine; growth factor; macrophage  
 F/1-20/Domain: signal sequence (fragment) #status predicted <SIG>  
 F/21-194/Product: granulocyte colony-stimulating factor #status predicted <MAT>

Query Match 82.6%; Score 744; DB 2; Length 194;  
 Best Local Similarity 81.0%; Pred. No. 1.1e-63;  
 Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 2 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 61  
 DB 21 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 80  
 QY 62 LSSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTIWOQ 121  
 DB 81 LSSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTIWOQ 140  
 QY 122 MEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 175  
 DB 141 MEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 194

## RESULT 4

T10268  
 granulocyte colony-stimulating factor - sheep (fragment)

C/Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)  
 C/Date: 16-Jul-1999 #sequence\_revision 16-Jul-1999 #text\_change 09-Jul-2004  
 C/Accession: T10268  
 R/O'Brien, P.M.; Seow, H.F.; Rothel, J.S.; Wood, P.R.  
 DNA Seq. 4, 339-342, 1994  
 A/Title: Cloning and sequencing of an ovine granulocyte colony-stimulating factor cDNA.  
 A/Reference number: Z17009; MUID:95102116; PMID:7528579  
 A/Accession: T10268  
 A/Status: preliminary; translated from GB/EMBL/DBJ  
 A/Molecule type: mRNA  
 A/Residues: 1-174 <OBR>  
 A/Cross-references: UNIPROT:Q28746; EMBL:L07939; NID:G310381; PIDN:AAA68006.1; PID:G3103  
 C/Genetics:  
 A/Gene: CSF  
 A/Function:  
 A/Description: stimulates the differentiation and proliferation of hematopoietic progenit  
 C/Superfamily: Interleukin-6  
 C/Keywords: cytokine; growth factor; macrophage

Query Match 81.9%; Score 738; DB 2; Length 174;  
 Best Local Similarity 82.2%; Pred. No. 3.7e-63;  
 Matches 143; Conservative 10; Mismatches 21; Indels 0; Gaps 0;

QY 2 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 61  
 DB 1 TPGLPASPFLKQSLKLEQVRKIQGDGAALQEKLCATYKLCHEBELVLLGSHGIPWAP 60  
 QY 62 LSSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTIWOQ 121  
 DB 61 LSSCPQALQAGLQSLHSGFLFYQGLQALLEGISPELGPTLDLQDVADFAATTIWOQ 120

QY 122 MEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 175  
 DB 121 MEELGMAPALQPTQGAMPAPAFASAFORRAGVAVASHLOSFLEVSRYVRLHIAOP 174

## RESULT 5

A26496  
 granulocyte colony-stimulating factor precursor - mouse

N/Alternate names: G-CSF  
 C/Species: Mus musculus (house mouse)  
 C/Date: 05-Oct-1988 #sequence\_revision 05-Oct-1988 #text\_change 09-Jul-2004  
 C/Accession: A29536; A26496; S02493

R.Tsuchiya, M. Kaziro, Y.; Nagata, S.  
Eur. J. Biochem. 165, 7-12, 1987  
A>Title: The chromosomal gene structure for murine granulocyte colony-stimulating factor  
A/Reference number: A29536; MUID:87190474; PMID:3494505  
A/Accession: A29536  
A/Molecule type: DNA  
A/Residues: 1-208 <TS>  
A/Cross-references: UNIPROT:P09920; GB:X05402; NID:G51059; PIDD:CAA28986.1; PID:G51060  
R.Tsuchiya, M.; Asano, S.; Kaziro, Y.; Nagata, S.  
Proc. Natl. Acad. Sci. U.S.A. 83, 7633-7637, 1986  
A>Title: Isolation and characterization of the cDNA for murine granulocyte colony-stimulating factor  
A/Reference number: A26496; MUID:87017003; PMID:3489940  
A/Accession: A26496  
A/Molecule type: mRNA  
A/Residues: 1-208 <TS>  
A/Cross-references: GB:M13926; NID:G193451; PIDD:AAA37672.1; PID:G309248  
R.Simpson, R.J.; Nice, E.C.; Nicola, N.A.  
Biol. Chem. Hoppe-Seyler 368, 1327-1331, 1987  
A>Title: Structural studies on the murine granulocyte colony-stimulating factor.  
A/Reference number: S02493; MUID:88106598; PMID:3501294  
A/Accession: S02493  
A/Status: preliminary  
A/Molecule type: protein  
A/Residues: 31-34,'X',36-43,'X',53-57,'X',60-71,'159-164','X',166-176,183-198,'X',202  
C/Genetics:  
A/Introns: 14/1, 71/3, 107/3, 156/3  
C/Superfamily: Interleukin-6  
C/Keywords: cytokine; growth factor; macrophage; monomer

Query Match 71.3%; Score 642; DB 2; Length 208;  
Best Local Similarity 74.6%; Pred. No. 6.7e-54;  
Matches 129; Conservative 11; Mismatches 33; Indels 0; Gaps 0;

Qy 1 MTPILGPASSLPPOSFLKCLCEQVRKIQGDGALQEKLCATYKLCHEBELVLGHSIGIPMA 60  
Db :::  
36 VSAIPLPSLPSPRSFLKSLBQVRKIQAGSVLBEQLCATYKLCHEBELVLGHSIGIPRA 95

Qy 61 PLSSCSQALQLAGCSQLHSGFLPYQGLQALBSISPELGLTDLTQLDVADPATTIQ 120  
Db 96 SLGGCSQALQOQTCQLSHSGFLCYQGLQALSGISPALAPTLDLQDVANFATTIQ 155

Qy 121 QNEELMAPLQPTQOGMAPAPASAPORRAGVTVASHLSQFLEVEYRVLRHLA 173  
Db 156 QNEELVAPVQPTQSGMPATTSAPQRRAGVLAISYQGFLETARLALHLHA 208

RESULT 6  
JC5043  
granulocyte colony-stimulating factor precursor - rat  
C/Species: Rattus norvegicus (Norway rat)  
C/Date: 21-Jan-1997 #sequence\_revision 21-Jan-1997 #text\_change 09-Jul-2004  
C/Accession: JC5043  
R/Han, S.W.; Ramesh, N.; Osborne, W.R.A.  
Gene 175, 101-104, 1996  
A>Title: Cloning and expression of the cDNA encoding rat granulocyte colony-stimulating factor  
A/Reference number: JC5043; MUID:97074656; PMID:8911083  
A/Accession: JC5043  
A/Molecule type: mRNA  
A/Residues: 1-214 <HAN>  
A/Cross-references: UNIPROT:P97712; GB:U37101; NID:G160065; PIDD:AACS2915.1; PID:G16006  
A/Experimental source: skin fibroblasts  
C/Comment: This receptor acts on precursor hemopoietic cells to control the production of Fc gamma R1-21/Domain: signal sequence #status predicted <SIG>  
F/1-21/Domain: signal sequence #status predicted <SIG>  
F/22-214/Product: granulocyte colony-stimulating factor #status predicted <MAT>

Query Match 70.5%; Score 635; DB 2; Length 214;  
Best Local Similarity 72.6%; Pred. No. 3.2e-53;  
Matches 127; Conservative 12; Mismatches 36; Indels 0; Gaps 0;

Qy 1 MTPILGPASSLPPOSFLKCLCEQVRKIQGDGALQEKLCATYKLCHEBELVLGHSIGIPMA 60  
Db :::  
27 VSAIPLPSLPSPRSFLKSLBQVRKIQAGSVLBEQLCATYKLCHEBELVLGHSIGIPRA 86

```

Qy      61 PLSSCPSOALQAGLSGLFLYOGILQLLEGISPELGPETLTLOLDVADPATTTIQ 120
        ||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      87 SLSSCSOALQOTKCLSQLHSGFLYOGILQLLAGISSLAFTDMLHDVDNFRATTIQQ 146

Qy      121 QMEELGMAPALOPTQGAMPAPAFASAFORRAGVLVAASHLOSFILEVSRYLRHLAQP 175
        ||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      147 QMESLGVAAPTQPTOSTMPITFSAFORRAGVLYVTSYLQSFILETHMHALHPLPRP 201

RESULT 7
A42247
myelomonocytic growth factor precursor - chicken
MAlternate names: colony-stimulating factor CMGF
C.Species: Gallus gallus (chicken)
C.Date: 16-Feb-1994 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C.Accession: A42247; S03633
J.Sternneck, E.; Blatner, C.; Graf, T.; Leutz, A.
Mol. Cell. Biol. 12, 1728-1735, 1992
A.Title: Structure of the chicken myelomonocytic growth factor gene and specific active
A.Reference number: A42247; MUID:92195319; PMID:1549124
A.Accession: A42247
A>Status: preliminary
A.Molecule type: DNA
A.Residues: 1-201 <STE>
A.Cross-references: UNIPROT:P13854
A.Note: sequence extracted from NCBI backbone (NCBIN:89832, NCBIP:89836)
R.Leutz, A.; Damm, K.; Sternneck, E.; Kowenz, E.; Nees, S.; Frank, R.; Gausegohl, H.; Pa
EMBO J. 8, 175-181, 1989
A>Title: Molecular cloning of the chicken myelomonocytic growth factor (CMGF) reveals t
A.Reference number: S03633; MUID:89231616; PMID:2785450
A.Accession: S03633
A.Molecule type: mRNA
A.Residues: 1-201 <LEU>
A.Cross-references: EMBL:X14477; NID:G63596; PIDN:CAA3639.1; PID:G63597
C.Superfamily: Interleukin-6
C.Keywords: glycoprotein
F.1-23/Domain: signal sequence #status predicted <SIG>
F.24-201/Product: myelomonocytic growth factor #status predicted <MAT>
F.123.13/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match          33.7%; Score 304; DB 2; Length 201;
Best Local Similarity 40.6%; Pred. No. 1.2e-21;
Matches 67; Conservative 28; Mismatches 68; Indels 2; Gaps 1;

Qy      12 OSPLKLCEFOVRKTQGGDAIAOEKLCATYKCHEBELVTLGHSLGIPIAPPSSCSOALQ 71
        ||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      36 QLFLAKNLIEFRKTRIGDVPAALQRAVCDTFQCTEBEQLQVPDPHLVQAPFDQCCHKRPQ 95

Qy      72 LAGLSLSHSGFLFYOGILQLLEGISPELGPETLTLOLDVADPATTTIQMEELGMAPAL 131
        ||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      96 AEVFETQIRAGLHAHYHSHLGNLVALLRNHTTVLVTLLQDDANLNSSNICQOMEDLSDLTYYT 155

Qy      132 OPTQ-GAMPAFASAFORRAGVLAASHLOSFILEVSRYLRHLAQ 174
        ||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      156 LPARQRSPPTFSGPFQOVGVFPILANFGFFLETAVRALHRLAR 200

RESULT 8
146590
interleukin 6 - pig
C.Species: Sus scrofa domestica (domestic pig)
C.Date: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 09-Jul-2004
C.Accession: I46590
J.Machlalsagan, N.; Bixby, J.; Roberts, M.R.
Mol. Reprod. Dev. 32, 324-330, 1992
A>Title: Expression of interleukin-6 in porcine, ovine, and bovine preimplantation conc
A.Reference number: I46590; MUID:92360284; PMID:1497880
A.Accession: I46590
A>Status: preliminary; translated from GB/EMBL/DDBJ
A.Molecule type: mRNA
A.Residues: 1-212 <MAT>
A.Cross-references: UNIPROT:P26893; GB:M80258; NID:G164514; PIDN:AAC27127.1; PID:G16451

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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 9, 2005, 12:41:15 ; Search time 111.819 Seconds

(without alignments)  
801.415 Million cell updates/sec

Title: US-10-750-797-2

Perfect score: 901  
Sequence: 1 MTPGLPASSLPQSFLKLCLE.....SHLOSFLVSYRVLNHLAQP 175

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%  
Listing first 45 summaries

Database : UniProt\_03:\*  
1: uniprot\_sprot:\*  
2: uniprot\_trembl:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	896	99.4	200	Q8N4W3	Q8N4W3 homo sapien
2	884.5	98.2	207	CSF3_HUMAN	P09919 homo sapien
3	744	82.6	194	CSF3_FELCA	O02708 felis silve
4	744	82.6	195	Q9G4U0	O9G4U0 felis silve
5	739	82.0	175	CSF3_CANFA	P35834 canis fam1
6	738	81.9	174	CSF3_SHEEP	Q28746 ovis aries
7	727	80.7	195	CSF3_BOVIN	P35833 bos taurus
8	702	77.9	195	CSF3_PIG	O02837 sus scrofa
9	642	71.3	208	CSF3_MOUSE	P09920 mus muscula
10	635	70.5	214	P97712	P97712 ratu
11	511	56.7	127	Q8MKE0	Q8MKE0 equus cabal
12	304	33.7	201	MGF_CHICK	P13854 gallus gall
13	111	12.3	241	Q90Y10	Q90Y10 gallus gall
14	110.5	12.3	212	Q8M75	Q8M75 sus scrofa
15	108	12.0	208	Q9XT80	Q9XT80 delphinape
16	106.5	11.8	212	IL6_PIG	P26893 sus scrofa
17	101	11.2	205	IL6_ORCOR	Q28747 orctine orc
18	100	11.1	208	IL6_HORSE	Q95181 equus cabal
19	96	10.7	189	Q6N282	Q6N282 homo sapien
20	96	10.7	189	Q9H2A5	Q9H2A5 homo sapien
21	95	10.5	208	IL6_FELCA	P41683 felis silve
22	94.5	10.5	455	Q8D706	Q8D706 vidio vuln
23	94	10.4	345	Q9NFT6	Q9NFT6 vidio chol
24	93	10.3	189	Q9NPF7	Q9NPF7 homo sapien
25	91	10.1	189	Q6N280	Q6N280 homo sapien
26	89.5	9.9	214	Q8MKE5	Q8MKE5 sus scrofa
27	89.5	9.9	2175	HMCT_DROME	P10180 dreophil
28	88.5	9.8	666	Q9A523	Q9A523 caulobacter
29	88.5	9.8	786	Q91019	Q91019 pseudomonas
30	88.5	9.8	1931	Q8RJY3	Q8RJY3 stigmatella
31	88	9.8	290	Q9P0S7	Q9P0S7 homo sapien

32	86	9.5	208	1	IL6_BOVIN	P26892 bos taurus
33	86	9.5	502	2	Q34008	Q34008 beta vulgar
34	86	9.5	788	2	Q8CF87	Q8CF87 mus musculu
35	86	9.5	850	2	Q7TQ21	Q7TQ21 mus musculu
36	86	9.5	851	2	Q8CF88	Q8CF88 mus musculu
37	86	9.5	852	2	Q81179	Q81179 mus musculu
38	85.5	9.5	211	2	Q865W7	Q865W7 camelus bac
39	85.5	9.5	1288	2	Q8LQ8	Q8LQ8 oryza sativ
40	85	9.4	193	2	Q9N2H9	Q9N2H9 sus scrofa
41	85	9.4	208	2	Q6V919	Q6V919 bubalus bub
42	84.5	9.4	209	1	IL6_PHOVI	Q28819 phoca vitul
43	84.5	9.4	211	1	IL6_LAMGL	Q865X6 lama glama
44	84.5	9.4	455	2	Q7MDW7	Q7MDW7 vidio vuln
45	84	9.3	175	2	Q9YTH4	Q9YTH4 actus nigri

## ALIGNMENTS

RESULT 1	ID	Q8N4W3	PRELIMINARY:	PRT:	200 AA.
AC	Q8N4W3				
DT	01-OCT-2002 (TRMBLrel. 22, Created)				
DT	01-OCT-2002 (TRMBLrel. 22, Last sequence update)				
DT	01-MAR-2004 (TRMBLrel. 26, Last annotation update)				
DE	Colony stimulating factor 3, isoform c.				
GN	Name=CSF3;				
OS	Homo sapiens (Human)				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.				
OX	NCBI_Taxid=9606;				
RP	[1]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Skin;				
RX	MEDLINE=2238257; PubMed=12477932; DOI=10.1073/pnas.242603899;				
RA	Strausberg R.L., Feingold E.A., Grove L.H., Derge J.G.,				
RA	Klausner R.D., Collins F.S., Wagner L., Sherman C.M., Schuler G.D.,				
RA	Altschul S.F., Zeeberg B., Buecaw K.H., Scheffer C.F., Bhat N.K.,				
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,				
RA	Ditachenko L., Marinina K., Farmer A.A., Rubin G.M., Hong L.,				
RA	Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,				
RA	Brownstein M.J., Usdin T.B., Tothyluk S., Carninci P., Prange C.,				
RA	Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,				
RA	Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,				
RA	Richard S., Morley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,				
RA	Villalón D.K., Wuzny D.M., Sodergren E.V., Lu X., Gibbs R.A.,				
RA	Fahy J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,				
RA	Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,				
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,				
RA	Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Buterfield Y.S.,				
RA	Krzywinski M.I., Skalska U., Smalins D.E., Scherch A., Schein J.E.,				
RA	Jones S.J., Marra M.A.,				
RT	"Generation and initial analysis of more than 15,000 full-length human				
RT	and mouse cDNA sequences."				
RP	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).				
RN	[2]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Skin;				
RA	Strausberg R.,				
RL	Submitted (JUN-2002) to the EMBL/Genbank/DBJ databases.				
DR	EMBL; BC033245; AAH3245.1; -				
DR	HSSP; P09919; IGNC.				
DR	GO; GO:0005576; C:extracellular; IEA.				
DR	GO; GO:0005125; F:cytokine activity; IEA.				
DR	GO; GO:0005138; F:interleukin-6 receptor binding; IEA.				
DR	GO; GO:0006955; P:immune response; IEA.				
DR	InterPro; IPR009079; 4_helix_cytokine.				
DR	InterPro; IPR003629; GCSF_MGF.				
DR	InterPro; IPR003573; IL6_MGF_GCSF.				
DR	InterPro; IPR003574; Interleukin_6.				
DR	Pfam; PF00489; IL6; 1.				
DR	PRINTS; PR00433; IL6GCSFMGF.				

DR PRINTS; PR00434; INTERLEUKIN.  
 DR Prodom; PD00838; GCSF MGF; 1.  
 DR Prodom; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR SEQUENCE 200 AA; 21543 MW; 8648A55B329A96C CRC64;  
 Query Match 99.4%; Score 896; DB 2; Length 200;  
 Best Local Similarity 100.0%; Pred. No. 6.9e-74;  
 Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 TPFGPSSLPQSFLLKLEQVRKIQGDGALQEKLCATYKLCPEELVLLGSHGIGPWAP 61  
 DB 27 TPFGPSSLPQSFLLKLEQVRKIQGDGALQEKLCATYKLCPEELVLLGSHGIGPWAP 86  
 QY 62 LSSCPGQALQACLSQSHGLFLYQGLDQALBSISPELPTDQLDQVADPATTWQ 121  
 DB 87 LSSCPGQALQACLSQSHGLFLYQGLDQALBSISPELPTDQLDQVADPATTWQ 146  
 QY 122 MEELGNAPLQPTQGANPAPASAPORRAGGVVASHQSFLEVSRYLRHAAOP 175  
 DB 147 MEELGNAPLQPTQGANPAPASAPORRAGGVVASHQSFLEVSRYLRHAAOP 200  
 RESULT 2  
 CSF3\_HUMAN STANDARD; PRT; 207 AA.  
 ID CSF3\_HUMAN P09919;  
 AC P09919;  
 DT 01-MAR-1989 (Rel. 10, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF) (Pluripolietin)  
 DE (Fligraetm) (lenograetm).  
 DE Name=CSF3;  
 OS Homo sapiens (human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominoidea; Homo.  
 NCBI\_TaxID=9606;  
 GN [1]  
 RN SEQUENCE FROM N.A.  
 RP MEDLINE=86118679; PubMed=3484805;  
 RA Nagata S., Tsuchiya M., Asano S., Yamazaki T., Yamamoto O.,  
 RA Hirata Y., Kubota N., Oheda M., Nomura H., Ono M.;  
 RT "Molecular cloning and expression of cDNA for human granulocyte  
 RT colony-stimulating factor.";  
 RL Nature 319:415-418(1986).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=86220137; PubMed=2423327;  
 RA Nagata S., Tsuchiya M., Asano S., Yamamoto O., Hirata Y., Kubota N.,  
 RA Oheda M., Nomura H., Yamazaki T., Yamamoto O.,  
 RT "The chromosomal gene structure and two mRNAs for human granulocyte  
 RT colony-stimulating factor.";  
 RL EMBO J. 5:575-581(1986).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=87196936; PubMed=3494801;  
 RA Devlin J.U., Devlin P.E., Myambo K., Lilly M.B., Rado T.A.,  
 RA Warren M.K.;  
 RT "Expression of granulocyte colony-stimulating factor by human cell  
 RT lines.";  
 RL J. Leukoc. Biol. 41:302-306(1987).  
 RN [4]  
 RP SEQUENCE FROM N.A., AND VARIANTS MET-157 AND THR-174.  
 RA Rieder M.U., Carrington D.P., Chung M.-W., Lee K.-L., Poel C.L., Yi Q.,  
 RA Nickerson D.A.;  
 RT "Sequences of the human HLA-DQA1 gene for genomic applications, UW-  
 RT FHCC, Seattle, WA (URL: <http://pga.gs.washington.edu>).";  
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.  
 RN [5]  
 RP SEQUENCE OF 19-207 FROM N.A.  
 RX MEDLINE=86151684; PubMed=2420009;  
 RA Souza L.M., Boone T.C., Gabrilove J., Lai P.H., Zsebo K.M.,

RA Murdock D.C., Chazin V.R., Bruszewski J., Lu H., Chen K.K.,  
 RA Barendt J., Platzer E., Moore M.A.S., Mettelmann R., Welte K.;  
 RT "Recombinant human granulocyte colony-stimulating factor: effects on  
 RT normal and leukemic myeloid cells.";  
 RL Science 232:61-66(1986).  
 RN [6]  
 RP CARBOHYDRATE-LINKAGE SITE.  
 RX MEDLINE=93293942; PubMed=7685769;  
 RA Clogston C.L., Hu S., Boone T.C., Lu H.S.;  
 RT "Glycosidase digestion, electrophoresis and chromatographic analysis  
 RT of recombinant human granulocyte colony-stimulating factor glycoforms  
 RT produced in Chinese hamster ovary cells.";  
 RL J. Chromatogr. A 637:55-62(1993).  
 RN [7]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=93106200; PubMed=1281794; DOI=10.1016/0014-5793(92)81521-M;  
 RA Zink T., Ross A., Ambrosius D., Rudolph R., Holak T.A.;  
 RT "Secondary structure of human granulocyte colony-stimulating factor  
 RT derived from NMR spectroscopy.";  
 RL FEBS Lett. 314:435-439(1992).  
 RN [8]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=94304859; PubMed=7518249;  
 RA Zink T., Ross A., Luehrs K., Cieplak C., Rudolph R., Holak T.A.;  
 RT "Structure and dynamics of the human granulocyte colony-stimulating  
 RT factor determined by NMR spectroscopy. Loop mobility in a four-helix-  
 RT bundle protein.";  
 RL Biochemistry 33:8453-8463(1994).  
 RN [9]  
 RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).  
 RX MEDLINE=93281718; PubMed=7685117;  
 RA Hill C.P., Osslund T.D., Eisenberg D.;  
 RT "The structure of granulocyte-colony-stimulating factor and its  
 RT relationship to other growth factors.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 90:5167-5171(1993).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 CC cytokines that act in hematopoiesis by controlling the production,  
 CC differentiation, and function of 2 related white cell populations  
 CC of the blood, the granulocytes and the monocytes-macrophages. This  
 CC CSF induces granulocytes.  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=Long;  
 CC IsoId=P09919-1; Sequence=Displayed;  
 CC Name=Short;  
 CC IsoId=P09919-2; Sequence=VSP\_002673;  
 CC -1- PTM: O-glycan consists of Gal-GalNAc disaccharide which can be  
 CC modified with up to two sialic acid residues (done in  
 CC recombinantly expressed G-CSF from CHO cells).  
 CC -1- PHARMACOLOGICAL: Available under the names Neupogen or Granulokine  
 CC (Amgen/Roche) and Granocyte (Rhône-Poulenc). Used to treat  
 CC neutropenia (a disorder characterized by an extremely low number  
 CC of neutrophils in blood).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 CC -1- CAUTION: Ref.4 misquotes the gene name as "CSF1".  
 CC -1- DATABASE: NAME=Neupogen/Granulokine;  
 CC NOTE=Clinical information on Neupogen/Granulokine;  
 CC WWW=<http://www.neupogen.com/>.  
 CC -----  
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 CC -----  
 DR EMBL; X03438; CAA27168.1; -  
 DR EMBL; M13008; AAA03056.1; -  
 DR EMBL; X03656; CAA27291.1; -  
 DR EMBL; X03655; CAA27290.1; -

```

DR EMBL; AF388025; AAK62469.1; -.
DR EMBL; M17706; AAA5882.1; -.
DR PIR; A24573; A24573.
DR PIR; A25093; FOHUGL.
DR PDB; 1CD9; X-ray; A/C=30-207.
DR PDB; 1GNC; NMR; @=30-207.
DR PDB; 1PGR; X-ray; A/C/E/G=30-207.
DR PDB; 1NHG; X-ray; A/B/C=31-207.
DR Genew; HGNC:2438; CSF3.
DR MIM; 138970; -.
DR GO; GO:0005615; C:extracellular space; TAS.
DR GO; GO:0005130; F:granulocyte colony-stimulating factor recep. .; TAS.
DR GO; GO:0007275; P:development; TAS.
DR GO; GO:0008284; P:positive regulation of cell proliferation; TAS.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRODOM; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR 3D-structure; Alternative splicing; Cytokine; Glycoprotein;
KW Growth factor; Pharmaceutical; Polymorphism; Signal.
FT SIGNAL 1 30
FT CHAIN 31 207
FT DISULFID 69 75
FT DISULFID 97 107
FT CARBOHYD 166 166
FT VASPLIC 66 68
FT VASPLIC 66 68
FT VARIANT 157 157
FT VARIANT 157 157
FT VARIANT 174 174
FT VARIANT 174 174
FT HELIX 41 65
FT HELIX 69 71
FT HELIX 77 86
FT TURN 87 88
FT HELIX 105 124
FT TURN 125 127
FT TURN 130 132
FT HELIX 133 156
FT TURN 157 158
FT HELIX 176 203
FT TURN 204 204
SQ SEQUENCE 207 AA; 22293 MW; 421F635ECC76996 CRC64;

Query Match 98.2%; Score 884.5; DB 1; Length 207;
Best Local Similarity 98.3%; Pred. No. 8,1e-73;
Matches 174; Conservative 0; Mismatches 0; Indels 3; Gaps 1;

QY 2 TPLGPASSLPSSFLKLCLEOVKRTQGDGAALQEK---CATYKLCHEBEVLVLTGHSIGIP 58
DB 31 TPLGPASSLPSSFLKLCLEOVKRTQGDGAALQEKLVSSCATYKLCHEBEVLVLTGHSIGIP 90
QY 59 WAPLSSCPQALQAGLSQLSHGLFLYQGLQLQALGEGISPELGPITDITLQLDVADFATTI 118
DB 91 WAPLSSCPQALQAGLSQLSHGLFLYQGLQLQALGEGISPELGPITDITLQLDVADFATTI 150
QY 119 WQWEEELGMADALPTQGAMPAPASAFORRAGGVTVASHLOSFLFVSYRVLRHLAQP 175
DB 151 WQWEEELGMADALPTQGAMPAPASAFORRAGGVTVASHLOSFLFVSYRVLRHLAQP 207

RESULT 3
CSF3_FELCA STANDARD; PRT; 194 AA.
AC 002708;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUN-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor precursor (G-CSF) (Fragment).

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```

GN Name=CSF3;
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX NCBI_Taxid=9685;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=European Shorthair; TISSUE=Lung;
RX MEDLINE=21389237; PubMed=11497496; DOI=10.1006/cyto.2001.0910;
RA Dunham S.P., Orlowski D.E.;
RT Isolation, nucleotide sequence and expression of a cDNA encoding
RT feline granulocyte colony-stimulating factor.;
RL Cytokine 14:347-351(2001).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC G-CSF induces granulocytes (By similarity).
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC -----
DR EMBL; Y08558; CAA69853.1; -.
DR PIR; T09255; T09255.
DR HSP; P09919; 1RHG.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRINTS; PR00434; INTERLEUKIN_6.
DR PRODOM; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR Cytokine; Glycoprotein; Growth factor; Signal.
FT SIGNAL 1 30
FT CHAIN 31 207
FT DISULFID 69 75
FT DISULFID 97 107
FT CARBOHYD 166 166
FT VASPLIC 66 68
FT VASPLIC 66 68
FT VARIANT 157 157
FT VARIANT 157 157
FT VARIANT 174 174
FT VARIANT 174 174
FT HELIX 41 65
FT HELIX 69 71
FT HELIX 77 86
FT TURN 87 88
FT HELIX 105 124
FT TURN 125 127
FT TURN 130 132
FT HELIX 133 156
FT TURN 157 158
FT HELIX 176 203
FT TURN 204 204
SQ SEQUENCE 194 AA; 21154 MW; F72B7AB3DAE73855 CRC64;

Query Match 82.6%; Score 744; DB 1; Length 194;
Best Local Similarity 81.0%; Pred. No. 5,4e-60;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 2 TPLGPASSLPSSFLKLCLEOVKRTQGDGAALQEK---CATYKLCHEBEVLVLTGHSIGIP 61
DB 21 TPLGPASSLPSSFLKLCLEOVKRTQGDGAALQEKLVSSCATYKLCHEBEVLVLTGHSIGIP 80
QY 62 LSSCPQALQAGLSQLSHGLFLYQGLQLQALGEGISPELGPITDITLQLDVADFATTI 121
DB 81 LSSCPQALQAGLSQLSHGLFLYQGLQLQALGEGISPELGPITDITLQLDVADFATTI 140
QY 122 MEELGMADALPTQGAMPAPASAFORRAGGVTVASHLOSFLFVSYRVLRHLAQP 175
DB 141 MEELGMADALPTQGAMPAPASAFORRAGGVTVASHLOSFLFVSYRVLRHLAQP 194

RESULT 4
Q9GJ00 PRELIMINARY; PRT; 195 AA.
ID Q9GJ00

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AC	09JUN-2001 (T-EMBLrel. 16, Created)
DT	01-MAR-2001 (T-EMBLrel. 16, Last sequence update)
DT	01-MAR-2001 (T-EMBLrel. 27, Last annotation update)
DE	05-JUL-2004 (T-EMBLrel. 27, Last annotation update)
DE	Granulocyte colony-stimulating factor precursor.
OS	Name=G-CSF;
OS	Felis silvestris catus (Cat).
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC	Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX	NCBI_TaxID=9685;
RN	(1)
RP	SEQUENCE FROM N.A.
RX	MEDLINE=21531548; PubMed=11675019; DOI=10.1016/S0378-1119(01)00575-3;
RA	Yamamoto A., Iwata A., Tsuchiya K., Katsumata A., Oishi K., Saito T.,
RA	Tsujiimoto H., Hasegawa A., Ueda S.;
RT	"Molecular cloning and expression of the cDNA encoding feline
RL	granulocyte colony-stimulating factor.";
RL	Gene 274:263-269 (2001).
DR	EMBL; AB042552; BAB17789.1; -
DR	EMBL; AB042553; BAB17757.1; -
DR	HSSP; P35834; 1BGE.
DR	GO; GO:0005576; C:extracellular; IEA.
DR	GO; GO:0005125; P:cytokine activity; IEA.
DR	GO; GO:0005138; F:interleukin-6 receptor binding; IEA.
DR	GO; GO:0006955; P:immune response; IEA.
DR	InterPro; IPR009079; 4 helix cytokine.
DR	InterPro; IPR003629; GCSF MGF.
DR	InterPro; IPR003573; IL6 MGF GCSF.
DR	InterPro; IPR003574; Interleukin_6.
DR	Pfam; PF00489; IL6; 1.
DR	PRINTS; PRO0433; IL6GSEMGF.
DR	PRINTS; PRO0434; INTERLEUKIN_6.
DR	ProDom; PD008388; GCSF MGF; 1.
DR	SMART; SM00126; IL6; 1.
DR	PROSITE; PS00254; INTERLEUKIN_6; 1.
KW	Signal.
FT	SIGNAL 1 22 Potential.
SQ	SEQUENCE 195 AA; 21255 MW; 544C682909412PCF CRC64;
Query Match	82.6%; Score 744; DB 2; Length 195;
Best Local Similarity	81.0%; Pred. No. 5, 4e-60;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;	
QY	2 TPLGPAASSLPQSFILKCLEFQVKIKIQGDGAALDEKLCATYKLCHEPVELYLGHSIGIPAP 61
DB	22 TPLGPTSSLPQSFILKCLEFQVKIKIQGDGAALDEKLCATYKLCHEPVELYLGHSIGIPAP 81
QY	62 LSSCSQAQLAGCLSQLHSGLFIVYQGLQALLEGISPELGPYLDITLQLDVADFATTINQ 121
DB	82 LSSCSQAQLAGCLSQLHSGLFIVYQGLQALLEGISPELGPYLDITLQLDVADFATTINQ 141
QY	122 MELGMAPRALPTQGMAPAFASAFORRAGGVIVASHLQSFLEVSRYVLRHLAOP 175
DB	142 MEDVGMAPRALPTQGMPTFTSAFORRAGGTVLVAASNLQSFLEVAAYRALRHFTKP 195
RESULT 5	
CSF3_CANFA	STANDARD; PRT; 175 AA.
AC	P35834;
DT	01-JUN-1994 (Rel. 29, Created)
DT	01-JUN-1994 (Rel. 29, Last sequence update)
DT	25-OCT-2004 (Rel. 45, Last annotation update)
DE	Granulocyte colony-stimulating factor (G-CSF).
OS	Name=CSF3;
OS	Canis familiaris (Dog).
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC	Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX	NCBI_TaxID=9615;
RN	(1)
RP	X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
RX	MEDLINE=94076341; PubMed=7504736;
RA	Lovejoy B., Cascio D., Eisenberg D.;

RT "Crysta structure of canine and bovine granulocyte-colony stimulating factor (G-CSF).";

RL J. Mol. Biol. 234:640-653(1993).

CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are cytokines that act in hematopoiesis by controlling the production, differentiation, and function of 2 related white cell populations of the blood, the granulocytes and the monocytes-macrophages. This CSF induces granulocytes.

CC -1- SUBUNIT: Monomer.

CC -1- SUBCELLULAR LOCATION: Secreted.

CC -1- PTM: O-glycosylated.

CC -1- SIMILARITY: Belongs to the IL-6 superfamily.

DR PDB; 1BGD; X-ray; @=1175.

DR InterPro; IPR005079; 4\_helix\_cytokine.

DR InterPro; IPR003629; GCSF\_MGF.

DR InterPro; IPR003573; IL6\_MGF\_GCSF.

DR Pfam; PF00489; IL6; 1.

DR PRINTS; PR00433; IL6GCSFMGF.

DR ProDom; PD008388; GCSF\_MGF; 1.

DR SMART; SM00126; IL6; 1.

DR PROSITE; PS00254; INTERLEUKIN\_6; 1.

KW 3D-structure; Cytokine; Glycoprotein; Growth factor.

FT DISULFID 37 43

FT FT 65 73

FT CARBOHYD 134 134 O-linked (GalNAc. . .) (By similarity).

FT STRAND 10 10

FT HELIX 12 39

FT HELIX 45 55

FT TURN 56 56

FT HELIX 63 65

FT HELIX 67 69

FT TURN 72 92

FT HELIX 93 95

FT TURN 98 100

FT TURN 101 125

FT HELIX 126 126

FT TURN 144 171

FT HELIX 172 172

FT TURN 173 173

FT STRAND 175 AA; 18858 MM; 28C26B24990C6DB3 CRC64;

SO SEQUENCE

Query Match 82.0%; Score 739; DB 1; Length 175;  
Best Local Similarity 80.6%; Pred. No. 1.4e-55;  
Matches 141; Conservative 11; Mismatches 23; Indels 0; Gaps 0.

QY 1 MTPPLGPASSLPQSFILKLCLEBOVRKIQDGAALOEKLCATYKLCAPBEELVILGHSIGIPWA 60  
DB 1 MAPLGPPLPQSFILKLCLEBOVRKIQDGAALOEKLCATYKLCAPBEELVILGHSIGIPQ 60  
QY 61 PLSSCPSQALQLAGCLSQLHSGFLTYOGLQALGEGISPELGPPTLDTLQLDVADPATIIMQ 120  
DB 1 PLSSCPSQALQLAGCLSQLHSGFLTYOGLQALGEGISPELGPPTLDTLQLDVADPATIIMQ 120  
QY 61 PLSSCPSQALQLAGCLSQLHSGFLTYOGLQALGEGISPELGPPTLDTLQLDVADPATIIMQ 120  
DB 61 PLSSCPSQALQLAGCLSQLHSGFLTYOGLQALGEGISPELGPPTLDTLQLDVADPATIIMQ 120  
QY 121 QMEELGAPALLOPTQGMAPAPASAFQRRAGGVVYASLQSFLEVSRYVLRHLAQP 175  
DB 121 QMEELGAPALLOPTQGMAPAPASAFQRRAGGVVYASLQSFLEVSRYVLRHLAQP 175  
QY 121 QMEELGAPALLOPTQGMAPAPASAFQRRAGGVVYASLQSFLEVSRYVLRHLAQP 175  
DB 121 QMEELGAPALLOPTQGMAPAPASAFQRRAGGVVYASLQSFLEVSRYVLRHLAQP 175

RESULT 6  
CSF3\_SHEEP STANDARD; PRT; 174 AA.  
ID CSF3\_SHEEP STANDARD; PRT; 174 AA.  
AC Q28746;  
DT 30-MAY-2000 (Rel. 39, Created)  
DT 30-MAY-2000 (Rel. 39, Last sequence update)  
DT 05-JUL-2004 (Rel. 44, Last annotation update)  
DE Granulocyte colony-stimulating factor (G-CSF).  
GN Name=CSF3;  
OS Ovis aries (sheep).  
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
OC Caprinae; Ovis.  
NCBI\_TaxID=9940;

```

RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=95102116; PubMed=7528579;
RA O'Brien P.M., Seow H.F., Roche J.S., Wood P.R.;
RT "Cloning and sequencing of an ovine granulocyte colony-stimulating
RT factor cDNA."
RL DNA Seq. 4:339-342(1994).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes (By similarity).
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC -----
DR EMBL, L07939; AAA68006.1; -.
DR PIR, T10268; T10268.
DR HSSP, P09919; 1RHG.
DR InterPro: IPR009079; 4 helix cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam, PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR Cytokine; Glycoprotein; Growth factor.
DR DISULFID 36 42 By similarity.
FT CARBOHYD 133 133 O-linked (GalNAc... ) (By similarity).
SQ SEQUENCE 174 AA; 18806 MW; BAA5A8F8D23ACDIE CRC64;

Query Match 81.9%; Score 738; DB 1; Length 174;
Best Local Similarity 82.2%; Pred. No. 1.7e-59;
Matches 143; Conservative 10; Mismatches 21; Indels 0; Gaps 0;

QY 2 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEEVLVLGSHGIPMAP 61
DB 1 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEEVLVLGSHGIPMAP 60
QY 62 LSSCPSQALQAGLSQLSHGLFLYQGLQALLEGISPELGPTDPTQLDVADEFATTIMQ 121
DB 61 LSSCPSQALQAGLSQLSHGLFLYQGLQALLEGISPELGPTDPTQLDVADEFATTIMQ 120
QY 122 MELGMAPALQPTQGMAPAFASAFORPAGVTVASHLQSFLEVSRYVLRHLAQP 175
DB 121 MELGMAPALQPTQGMAPAFASAFORPAGVTVASHLQSFLEVSRYVLRHLAQP 174

RESULT 7
CSF3_BOVIN STANDARD; PRT; 195 AA.
ID CSF3_BOVIN
AC P35833; Q9TV89;
DT 01-JUN-1994 (Rel. 29, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Granulocyte colony-stimulating factor precursor (G-CSF).
GN Name=CSF3; Synonyms=GCSF;
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovinae; Bos
NCBI_TaxID=9913;

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RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=94076341; PubMed=7504736;
RA Heidecker M., Kehrl M.E. Jr.;
RT "Cloning, sequencing, and analysis of cDNA encoding bovine granulocyte
RT colony stimulating factor."
RL Submitted (SEP-1998) to the EMBL/Genbank/DBJ databases.
CC [2]
CC X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).
CC MEDLINE=94076341; PubMed=7504736;
CC Lovejoy B., Cascio D., Eisenberg D.;
CC "Crystal structure of canine and bovine granulocyte-colony stimulating
CC factor (G-CSF)."
CC J. Mol. Biol. 234:640-653(1993).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes.
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated.
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL, AF092533; AAD16102.1; -.
DR PDB; 1BGC; X-ray; @22-195.
DR InterPro: IPR009079; 4 helix cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR 3D-structure; Cytokine; Glycoprotein; Growth factor; Signal.
FT SIGNAL 1 21 Potential.
FT CHAIN 22 195 Granulocyte colony-stimulating factor.
FT DISULFID 57 63
FT CARBOHYD 154 154 O-linked (GalNAc... ) (By similarity).
FT CONFLICT 93 94 TS -> RG (in Ref. 2).
FT HELIX 32 60
FT HELIX 65 69
FT TURN 70 71
FT HELIX 72 75
FT TURN 76 76
FT HELIX 83 85
FT TURN 87 89
FT HELIX 92 112
FT TURN 113 115
FT TURN 118 120
FT HELIX 121 145
FT HELIX 164 191
FT TURN 192 192
SQ SEQUENCE 195 AA; 806119EA4DF873 CRC64;

Query Match 80.7%; Score 727; DB 1; Length 195;
Best Local Similarity 81.0%; Pred. No. 1.9e-58;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 2 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEEVLVLGSHGIPMAP 61
DB 22 TPLGPASSLPQSFLLKCEQVRKIQGDAALQELCATYKLCHEEVLVLGSHGIPMAP 61
QY 62 LSSCPSQALQAGLSQLSHGLFLYQGLQALLEGISPELGPTDPTQLDVADEFATTIMQ 121

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Db 82 LSSCSQSLQTLSCINQLHSGFLVYGLLQALAGISPELAPLIDTLQDVTDPATNIMQ 141
Qy 122 MELGMAPLQPTQGMPPAFASFORRAGGVVVAHSLQSLFVSVYVRLHIAOP 175
Db 142 MEDLGAAPVAPVOPQGMPTFTSAFORRAGGVVVAHSLQSLFVSVYVRLHIAOP 195

RESULT 8
CSF3_PIG STANDARD; PRT; 195 AA.
ID CSF3_PIG 002837; 019180;
AC 002837; 019180; (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor precursor (G-CSF).
GN Name=CSF3;
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OK NCBI_TaxId=9823;
RN (1)
RP SEQUENCE FROM N.A.
RA Kulmburg P.;
RT Submitted (JAN-1997) to the EMBL/GenBank/DBJ databases.
RN (2)
RP SEQUENCE FROM N.A.
RA TISSUE=Liver;
RC Glozier S.E., Sandeman R.M., Strom A.D.G.;
RA "Cloning of a cDNA and gene encoding porcine granulocyte-colony
RT stimulating factor.";
RT Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes (By similarity).
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: Y10494; CAA71518.1; -
DR EMBL: U68482; AAB70701.1; -
DR EMBL: U68481; AAB70700.1; -
DR HSSP: P09919; 1RHG.
DR InterPro: IPR009079; 4_helix_cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR SMART: PD008388; GCSF_MGF; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
DR Kyrkine; Glycoprotein; Growth factor; Signal.
FT SIGNAL 1 21 Potential.
FT CHAIN 22 195 Granulocyte colony-stimulating factor.
FT DISULFID 57 63 By similarity.
FT DISULFID 85 95 By similarity.
FT CARBOHYD 154 154 O-linked (GalNAc... ) (By similarity).
FT CONFLICT 123 123 A -> R (in Ref. 1).
FT SEQUENCE 195 AA; 21214 MW; 84787P20DBA8A1C CRC64;
SQ
Query Match 77.9%; Score 702; DB 1; Length 195;
Best Local Similarity 79.2%; Pred. No. 3.8e-56;

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Matches 137; Conservative 11; Mismatches 25; Indels 0; Gaps 0;
Qy 3 PLGPASSLPQSFLEKLBROVKRIGDGAALQKCATYKLCHEPELVILGSHGIPMPL 62
Db 23 PLSPPASSLPQSFLEKLBROVKRIGDGAALQKCATYKLCHEPELVILGSHGIPMPL 82
Qy 63 SSCPSQALQTLSCINQLHSGFLVYGLLQALAGISPELAPLIDTLQDVTDPATNIMQ 122
Db 83 SSCPSQALQTLSCINQLHSGFLVYGLLQALAGISPELAPLIDTLQDVTDPATNIMQ 142

RESULT 9
CSF3_MOUSE STANDARD; PRT; 208 AA.
ID CSF3_MOUSE 009920;
AC P09920;
DT 01-MAR-1989 (Rel. 10, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor precursor (G-CSF).
GN Name=Csfg3; Synonyms=Csfg;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Mus.
OK NCBI_TaxId=10090;
RN (1)
RP SEQUENCE FROM N.A.
RA MEDLINE=87017003; PubMed=3489940;
RA Tsuchiya M., Asano S., Kaziro Y., Nagata S.;
RT "Isolation and characterization of the cDNA for murine granulocyte
RT colony-stimulating factor.";
RT Proc. Natl. Acad. Sci. U.S.A. 83:7633-7637 (1986).
RN (2)
RP SEQUENCE FROM N.A.
RA MEDLINE=87190474; PubMed=3494605;
RA Tsuchiya M., Kaziro Y., Nagata S.;
RT "The chromosomal gene structure for murine granulocyte colony-
RT stimulating factor.";
RT Eur. J. Biochem. 165:7-12 (1987).
RN (3)
RP PARTIAL SEQUENCE.
RX PubMed=3501294;
RA Simpson R.J., Nice E.C., Nicola N.A.;
RT "Structural studies on the murine granulocyte colony-stimulating
RT factor.";
RT Biol. Chem. Hoppe-Seyler 368:1327-1331 (1987).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes.
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: M13926; AAA37672.1; -
DR EMBL: X05402; CAA28986.1; -
DR PIR: A29536; A26496.
DR HSSP: P09919; 1RHG.
DR InterPro: IPR009079; 4_helix_cytokine.

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DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
DR Cytokine; Direct protein sequencing; Glycoprotein; Growth factor;
KW Signal.
FT SIGNAL 1 30
FT CHAIN 31 208 Granulocyte colony-stimulating factor.
FT DISULFID 72 78 By similarity.
FT DISULFID 100 110 By similarity.
FT CARBOHYD 169 169 O-linked (GalNAc...) (By similarity).
SQ SEQUENCE 208 AA; 22421 MW; 0BF3622135C906DB CRC64;

Query Match 71.3%; Score 642; DB 1; Length 208;
Best Local Similarity 74.6%; Pred. No. 1.2e-50;
Matches 129; Conservative 11; Mismatches 33; Indels 0; Gaps 0;

Qy 1 MTPGLPASPSPQSLFKLEQVRKIQGDGALQEKLCATYKLCHEBELVLGHSIGIPMA 60
Db 36 VSALPSPSLPRLPSFLKLSIQVRKIQAGSVLLBQLCATYKLCHEBELVLGHSIGIPMA 95
Qy 61 PLSSCPQALQLAGLSQHSGLFLYQGLQALBISPELPTLDTLQDVADFATTIWO 120
Db 96 SLSSCSQALQOTKLSQHSGLFLYQGLQALBISPELPTLDTLQDVADFATTIWO 155
Qy 121 QMEELGMAPALOPTOGAMPAPAFASAFORRAGVTVASHLOSFLVSVRYLRHA 173
Db 156 QMENIGVAPVPTOPTOSAMPAPAFASAFORRAGVTVASHLOSFLVSVRYLRHA 208

RESULT 10
P97712 PRELIMINARY; PRT; 214 AA.
AC P97712;
DT 01-MAY-1997 (TREMBLrel. 03, Created)
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Granulocyte colony stimulating factor.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97074656; PubMed=8917083; DOI=10.1016/0378-1119(96)00131-X;
RA Han S.W., Ramesh N., Osborne W.R.;
RT "Cloning and expression of the cDNA encoding rat granulocyte colony-
RT stimulating factor";
RL Gene 175:101-104(1996).
DR EMBL; U37101; AAC52915.1; -.
DR PIR; JCS043; JCS043.
DR HSSP; P09919; 1R8G.
DR GO; GO:0005576; C:cytokine activity; IEA.
DR GO; GO:0005125; F:growth factor activity; IEA.
DR GO; GO:0008083; F:immune response; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro: IPR009079; 4_helix_cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 214 AA; 23659 MW; 29BB88B17B64C55 CRC64;

Query Match 70.5%; Score 635; DB 2; Length 214;
Best Local Similarity 72.6%; Pred. No. 5.6e-50;
Matches 127; Conservative 12; Mismatches 36; Indels 0; Gaps 0;

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Qy 1 MTPGLPASPSPQSLFKLEQVRKIQGDGALQEKLCATYKLCHEBELVLGHSIGIPMA 60
Db 27 VSSLPPSLPRLPSFLKLSIQVRKIQAGSVLLBQLCATYKLCHEBELVLGHSIGIPMA 86
Qy 61 PLSSCPQALQLAGLSQHSGLFLYQGLQALBISPELPTLDTLQDVADFATTIWO 120
Db 87 SLSSCSQALQOTKLSQHSGLFLYQGLQALBISPELPTLDTLQDVADFATTIWO 146
Qy 121 QMEELGMAPALOPTOGAMPAPAFASAFORRAGVTVASHLOSFLVSVRYLRHA 175
Db 147 QMENIGVAPVPTOPTOSAMPAPAFASAFORRAGVTVASHLOSFLVSVRYLRHA 201

RESULT 11
QMKEO PRELIMINARY; PRT; 127 AA.
ID QMKEO;
AC QMKEO;
DT 01-OCT-2002 (TREMBLrel. 22, Created)
DT 01-OCT-2002 (TREMBLrel. 22, Last sequence update)
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Granulocyte colony-stimulating factor.
CN Name=G-CSF;
OC Equus caballus (Horse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX NCBI_TaxID=9796;
RN [1]
RP SEQUENCE FROM N.A.
RA Notoma L.E., Takafuji V.A., Sharova L.V., Crisman M.V., Howard R.D.;
RL Submitted (APR-2002) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF503365; AAMJ4205.1; -.
DR HSSP; P35833; 1BGC.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0008083; F:growth factor activity; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro: IPR009079; 4_helix_cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 127 AA; 13657 MW; 25559C2569802077 CRC64;

Query Match 56.7%; Score 511; DB 2; Length 127;
Best Local Similarity 79.5%; Pred. No. 7e-39;
Matches 101; Conservative 9; Mismatches 17; Indels 0; Gaps 0;

Qy 49 VILGHSIGIPWAPLSSCPQALQLAGLSQHSGLFLYQGLQALBISPELPTLDTLQ 108
Db 1 MLGHSIGIPQLPLSSCSQALQOTKLSQHSGLFLYQGLQALBISPELPTLDTLQ 60
Qy 109 LDVADFATTIWOQMEELGMAPALOPTOGAMPAPAFASAFORRAGVTVASHLOSFLVSVRY 168
Db 61 LDVADFATTIWOQMEELGMAPALOPTOGAMPAPAFASAFORRAGVTVASHLOSFLVSVRY 120
Qy 169 LRHLAOP 175
Db 121 LRYLAEP 127

RESULT 12
MGF_CHICK STANDARD; PRT; 201 AA.
ID MGF_CHICK;
AC P13854;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Myelomonocytic growth factor precursor (MGF).
OS Gallus gallus (Chicken).

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OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Gallus.  
 OX NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=69231616; Pubmed=2785450;  
 RA Leutz A., Damm K., Sterneck B., Kowenz E., Nees S., Frank R.,  
 RA Gausepohl H., Pan Y.-C.E., Smart J., Hayman M., Graf T.;  
 RT "Molecular cloning of the chicken myelomonocytic growth factor (CMGF)  
 RT reveals relationship to interleukin 6 and granulocyte colony  
 RT stimulating factor";  
 RL EMBO J. 8:175-181(1989).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=92195319; Pubmed=1549124;  
 RA Sterneck E., Blattner C., Graf T., Leutz A.;  
 RT "Structure of the chicken myelomonocytic growth factor gene and  
 RT specific activation of its promoter in avian myelomonocytic cells by  
 RT protein kinases";  
 RL Mol. Cell. Biol. 12:1728-1735(1992).  
 CC -1- FUNCTION: Hematopoietic growth factor that stimulates the  
 CC proliferation and colony formation of normal and transformed avian  
 CC cells of the myeloid lineage.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
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DR EMBL; M85034; AAA48694.1; -;  
 DR EMBL; X14477; CAA32639.1; -;  
 DR PIR; A42247; A42247.  
 DR HSSP; P09919; 1RHG.  
 DR InterPro; IPR009079; 4\_helix\_cytokine.  
 DR InterPro; IPR003629; GCSF\_MGF.  
 DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
 DR InterPro; IPR003574; Interleukin\_6.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PRO0433; IL6GCSFMGF.  
 DR PRINTS; PRO0434; INTERLEUKIN\_6.  
 DR PRODOM; PD008388; GCSF\_MGF; 1.  
 DR PRODOM; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR GlycoSite; Growth factor; Signal.  
 FT CHAIN 1 23  
 FT DISULFID 24 201  
 FT DISULFID 61 67  
 FT DISULFID 89 99  
 FT CARBOHYD 123 123  
 FT CARBOHYD 137 137  
 SQ SEQUENCE 201 AA; 22373 MW; 240A6DD21B4244E6 CRC64;

Query Match 33.7%; Score 304; DB 1; Length 201;  
 Best Local Similarity 40.6%; Pred. No. 1e-19;  
 Matches 67; Conservative 28; Mismatches 68; Indels 2; Gaps 1;

QY 12 QSFLLKLEQVARKIOGDGALQKCATYKLCHEPELVILGHSIGTMAVLLSCPSQALQ 71  
 DB 36 QFELHKLKLETRKIRGVALQRAVCTFQLCTEEELQVLQPPHVLQALDQCHKRGFQ 95  
 QY 72 LAGCLSLQSHSGFLYQGLQALGSLPELGLPTLDTLQLDVADPATTTWQMEELGNAPAL 131  
 DB 96 AEVCFQIIRAGLAIYHDSLGAVLRILPNNHTTVETTLQDLDAANSSNLCQOMEDLGLDVT 155  
 QY 132 OPTQ--GAMPAPASAFQRRAGVTVASHLQSFLEVSRYVLRHLAQ 174

DB 156 LPABQSPPTPFGSPFQOQVGFFLIANFQRELETAYRALRHLAR 200  
 RESULT 13  
 ID Q90Y10 PRELIMINARY; PRT; 241 AA.  
 AC Q90Y10;  
 DT 01-DEC-2001 (TrEMBLrel. 19, Created)  
 DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)  
 DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)  
 DE Interleukin-6 precursor.  
 OS Name=IL-6;  
 GN Gallus gallus (Chicken).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Gallus.  
 OX NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Schneider K., Klaas R., Kaspers B., Staeheli P.;  
 RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P., Rothwell L., Gallov E.E., Barrow P.A., Burnside J.,  
 RA Wigley P.;  
 RT "Differential cytokine expression in avian cells in response to  
 RT invasion by Salmonella typhimurium, Salmonella enteritidis and  
 RT Salmonella gallinarum";  
 RL Microbiology 146:3217-3226(2000).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P.;  
 RL Submitted (JAN-2003) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AJ309540; CAC40812.1; -;  
 DR EMBL; AJ250838; CAC15566.2; -;  
 DR HSSP; P05231; IALD.  
 DR GO; GO:000576; C:extracellular; IEA.  
 DR GO; GO:0005125; F:cytokine activity; IEA.  
 DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.  
 DR GO; GO:0006955; P:immune response; IEA.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PRO0433; IL6GCSFMGF.  
 DR PRINTS; PRO0434; INTERLEUKIN\_6.  
 DR PRODOM; PD008388; GCSF\_MGF; 1.  
 DR PRODOM; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR GlycoSite; mature ChIL-6.  
 FT CHAIN 1 47  
 FT SIGNAL 48 241  
 SQ SEQUENCE 241 AA; 26790 MW; 657F8049F25BD2F8 CRC64;

Query Match 12.3%; Score 111; DB 2; Length 241;  
 Best Local Similarity 22.2%; Pred. No. 0.055;  
 Matches 46; Conservative 35; Mismatches 74; Indels 52; Gaps 7;

QY 4 LBPASSLP-----QSFLKLEQVARKIOGDGALQKCATYKLCG 44  
 DB 41 LPPAAVLPPLAADDSSGEVGLBEKAGRAPALDCEPLAVLDRAVQLODDECKKFTVCE 100  
 QY 45 PEEVLVLGHSIGIPWAPLSSCPQALQLAG-----CLQSHSGFLYQGLQALGSLPE 99  
 DB 101 NSMEMVLVRNNLPL-----KVTEEDGILAGFBEKCLTGLSSGLFAFYLRIGETPDS 156  
 QY 100 LAGPTLDTLQLDVADPATTTWQMEELGNAPALOPTQGAMPAPASAFQRRAGVTV 153  
 DB 157 EKQNVESLCYSTKHLAATIRQNV-----INPDEVLP--DSAQKSLANLKSXDKDW 206  
 QY 154 ---VASHL-----QSFLVSRYVLRHL 172  
 DB 207 IETIMHLIRLDFTSMEKTVRAVRYL 233

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RESULT 14
Q8MJ75 PRELIMINARY; PRT; 212 AA.
ID Q8MJ75;
AC Q8MJ75;
DT 01-OCT-2002 (TREMBlrel. 22, Created)
DT 01-OCT-2002 (TREMBlrel. 22, Last sequence update)
DT 01-MAR-2004 (TREMBlrel. 26, Last annotation update)
DE IL-6.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Suidae; Sus.
OC NCBI_TaxID=9823;
RN (1)
RP SEQUENCE FROM N.A.
RA Lee D., Yoo H., Choi I.;
RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
RL EMBL: AF513322; AMN74938.1; -.
DR HSBP; P05231; IALU.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRINTS; PR00434; INTERLEUKIN6.
DR ProDom; PD004356; Interleukin_6; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 212 AA; 23881 MW; 1F540E7030BCFD77 CRC64;

Query Match
Best Local Similarity 23.3%; Score 110.5; DB 2; Length 212;
Matches 37; Conservative 32; Mismatches 85; Indels 5; Gaps 3;

QY 17 KCLEQVRKIQGDGAALQEKLCATYKLCHEPELVILGHSIGIP-WAPLSSCPSQLQIAGC 75
DB 52 KTEBELIKYILGKISAMREKCEKYEKCNSEKYLAEENLNLPKMAEKDGCFOGSGFNGETC 111
QY 76 LSQHSGLFLYQGLQALBEGISPELGTLDLTQLDVADEFATTIWOQMEELGMAPALOPT- 134
DB 112 LMRITTYGLVEFOIYLDYLOKYEKSNKGNVEAVQISTKALQITLRQKGNPKDKATTNPPTT 171
QY 135 -QGAPAFAS--AFQRRAGVLAASHQSFLEVSRYVLR 170
DB 172 NAGLDDKLOSONEMWKNYKIIILRSLEDFLPFSLRAIR 210

RESULT 15
Q9XT80 PRELIMINARY; PRT; 208 AA.
ID Q9XT80;
AC Q9XT80;
DT 01-NOV-1999 (TREMBlrel. 12, Created)
DT 01-NOV-1999 (TREMBlrel. 12, Last sequence update)
DT 01-MAR-2004 (TREMBlrel. 26, Last annotation update)
DE Interleukin 6.
OS Delphinapterus leucas (beluga whale).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti;
OC Monodontidae; Delphinapterus.
OC NCBI_TaxID=9749;
RN (1)
RP SEQUENCE FROM N.A.
RA MEDLINE=20141864; PubMed=10678396; DOI=10.1016/S0165-2427(99)00150-6;
RA St-Laurent G., Archambault D.;
RT "Molecular cloning, phylogenetic analysis and expression of beluga
RL whale (Delphinapterus leucas) interleukin 6.";
RL EMBL; AF076643; AAD42929.1; -.
DR HSBP; P05231; IALU.
DR GO; GO:0005576; C:extracellular; IEA.
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DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRINTS; PR00434; INTERLEUKIN6.
DR ProDom; PD004356; Interleukin_6; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 208 AA; 23456 MW; 81CC85C6E80389C4 CRC64;

Query Match
Best Local Similarity 21.3%; Score 108; DB 2; Length 208;
Matches 33; Conservative 35; Mismatches 81; Indels 6; Gaps 2;

QY 22 VRKIQGDGAALQEKLCATYKLCHEPELVILGHSIGIP-WAPLSSCPSQLQIAGC 80
DB 52 IKYILGKISAMREKCEKYEKCNSEKYLAEENLNLPKMAEKDGCFOGSGFNGETC 111
QY 81 SGLFLYQGLQALBEGISPELGTLDLTQLDVADEFATTIWOQMEELGMAPALOPTOGA--- 137
DB 112 TGLLEVOIYLDYLOKYEKSNKGNVEAVQISTKALQITLRQKGNPKDKATTNPPTT 171
QY 138 --MPAFASAFQRRAGVLAASHQSFLEVSRYVLR 170
DB 172 NNLQSONDWMKNTKIIILRSLEDFLPFSLRAIR 206
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Search completed: July 9, 2005, 12:53:58  
Job time : 111.819 secs